From: Rose, Adrian (Houston)

Sent: Monday, May 10, 2010 8:02 PM

To: McMahan, Larry (Houston)

Cc: Bobillier, Arnaud (Geneva); Ambrose, Bill (Houston); Cantwell, Guy (Houston)

Subject: FW:

Attachments: DWH.zip

FYI - This was the MAHRA conducted for the Horizon in 2004.

Regards

Adrian Rose

PRIVILEGED AND CONFIDENTIAL

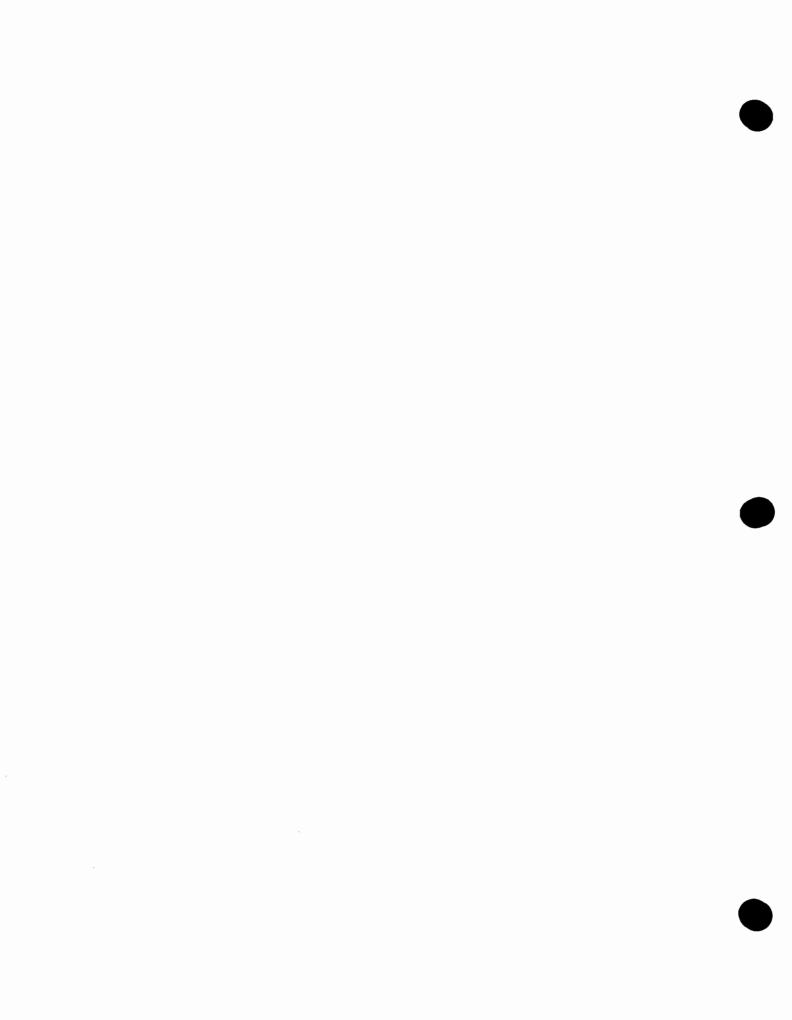
ATTORNEY-CLIENT COMMUNICATION

2188

Exhibit No.

Worldwide Court Reporters, Inc.

TRN-MDL-01184580



MAJOR ACCIDENT HAZARD RISK ASSESSMENT

DEEPWATER HORIZON

Revision: 01 29 AUGUST 2004

STATEMENT OF APPROVAL

The Major Accident Hazard Risk Assessment performed for the Deepwater Horizon identified reasonably foreseeable hazards that might lead to a major accident. It has been demonstrated that adequate controls are in place so that HSE risks on the Deepwater Horizon can be considered both tolerable and ALARP (As Low As Reasonably Practicable). This assessment has been reviewed and recommendations which were developed have been followed up.

8-29-2014 Date

In light of the above, this document is approved.

John Keeton

CONFIDENTIAL



EXECUTIVE SUMMARY

From August 4, 2003 to August 8, 2003, a team of personnel from Transocean performed a Major Accident Hazard Risk Assessment on the Deepwater Horizon.

The purpose of the study was to demonstrate that adequate controls are in place so that HSE risks on the Deepwater Horizon can be considered both tolerable and ALARP (As Low As Reasonably Practicable).

In order to accomplish this, the hazards that might lead to a Major Accident were identified and measures shown to be in place to eliminate the hazards or mitigate the consequences of the hazards.

The study team examined hazards associated with individual compartments, critical systems, and the entire installation.

During the entire Major Accident Hazard Risk Assessment, the team developed twenty seven (27) recommendations. None of the recommendations were for hazards ranked 'High' Risk, nine (9) were for hazards ranked as 'Medium' Risk, fourteen (14) were for hazards ranked 'Low' Risk, and four (4) were unranked.

Each recommendation from the assessment will become an Action Item and assigned to a Responsible Person. Each recommendation will require follow up after which the results of the actions will be recorded and the report reissued. If no action was taken for a given recommendation, a reason must be recorded.

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INTRODUCTION

The purpose of the study was to demonstrate that adequate controls are in place so that HSE risks on the Deepwater Horizon can be considered both tolerable and ALARP (As Low As Reasonably Practicable).

In order to accomplish this, the hazards that might lead to a Major Accident must be identified and measures shown to be in place to eliminate the hazards or mitigate the consequences of the hazards.

OBJECTIVES

To critically examine the Installation and its modus-operandi in order to identify and evaluate the risks with respect to the overall safety to the crew and the Installation.

To make recommendations that could eliminate a hazard or reduce the consequences or frequency of an incident to ALARP (As Low as Reasonably Practicable).

DEFINITION - MAJOR ACCIDENT HAZARD

A major accident means: (From UK Safety Case Regulations)

- a) a fire, explosion or the release of a dangerous substance involving death or serious personal injury to persons on the Installation or engaged in an activity on or in connection with it;
- b) any event involving major damage to the structure at the Installation or plant affixed thereto or any loss in the stability of the Installation:
- c) a collision of a helicopter with the Installation;
- d) the failure of life support systems for diving operations in connection with the Installation, the detachment of a diving bell used for such operations of the trapping of a diver in a diving bell of other subsea chamber used for such operations; or
- e) any other event ansing from a work activity involving death or serious personal injury to five or more persons on the Installation or engaged in a activity in connection with it.

PROCESS

The process is divided into three sections. These sections must be taken as part of a greater whole in order to assure that confidence can be placed in the results of the study. Each of the three sections examines the vessel (and any associated hazards) with different perspectives. The sections are:

- Compartment-by-Compartment
- □ System-by-System
- Entire Installation

The process was completed by a team made of both installation based and onshore based personnel. This provides for greater 'buy-in' by the personnel actually implementing and using the systems, as well as:

- Developing further 'ownership' of safety issues among the crew;
- Increasing the understanding and insight among the crew as to the interaction of hardware, procedure, human aspects of a 'safe' operation;
- Developing 'in-house' capabilities within the personnel; and
- Keeping the Risk Assessment Procedure within the ease of understanding of the personnel involved.

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PERSONNEL

The following personnel participated in the study:

Steve Cross

Toolpusher

Richard Kennedy

Mechanical Supervisor

Mike Marzolf Peter Cyr

Captain Chief Mate

Kenneth Hildre

Chief Engineer

Steve Bertone

Electrical Supervisor

Tyson Cullum Dan Vairo Mike Dow

RSTC 3rd Mate

3rd Mate Roustabout

Lee Meyers Sammy Moore

Facilitator

A brief resume of each of the personnel in the study team is included in Appendix I.

BACKGROUND

The Deepwater Horizon is a dynamically positioned semi-submersible Mobile Offshore Drilling Unit (MODU) capable of operating in harsh environments and water depths up to 8,000 feet. It is classed with ABS and is registered under the Panamanian flag. Maximum POB (personnel on board) is 146.

MAJOR ACCIDENT HAZARD SCENARIOS

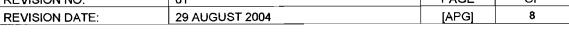
The study concentrated on identifying Major Accident Hazards. The following is a list of possible Major Accident Hazards for semi-submersibles engaged in exploration or development drilling.

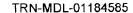
- Shallow Gas Blowout Subsea
- Shallow Gas Blowout in Cellar Deck
- Reservoir blowout at Drill Floor
- Toxic Gas Release
- Fire / Explosion due to Entrained Gas Release in Mud Processing Areas
- Well Test Area Fire / Explosion
- **Explosion of Pressure Vessels**
- Major Mechanical Failure
- **Dropped Objects**
- Ship Collision
- Helicopter Crash on Installation
- Structural Failure due to Extreme Weather
- Station Keeping Failure
- Loss of Stability
- Loss of Control in Transit

Other Possibilities:

- Marine Events
- Man Overboard
- Helicopter Crash into Sea

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COMPARTMENT PERSPECTIVE

Process

The study team developed a list of compartments and areas on the vessel. The team then visited each compartment or area and completed a Compartment Sheet for each area. The team identified all power, fluid, control lines, and control systems in the space. The team also identified the safety provisions for the space including HVAC configuration, passive fire protection, fire and gas detection, fire suppression means, and escape routes.

The team then identified any equipment or situations that could lead to a Major Accident. The hazard, consequences, preventions, and mitigations were recorded on the Compartment Sheet along with any recommendation that the team felt were necessary. The team also ranked the hazard by Severity and Likelihood, and determined the Risk Rank using a Risk Matrix. (The Risk Matrix can be found in Appendix II of this report).

After completing the survey of the various compartments, the team met and reviewed each Compartment Sheet to ensure that the sheets were compete and accurate.

List of Compartments

The study team examined the following compartments. The individual Compartment Sheets can be found in Appendix III of this report.

- #1 Process Equipment Room
- #5 Thruster Upper and Lower
- · 24 m Flat Port Forward
- · 28.5 m Flat Port Forward
- A/C Unit Room
- Aft Lifeboat Deck
- AHU Room Port 2nd Deck
- Auxiliary Demck
- Auxiliary M/C Room Port
- Battery Room
- BOP Accumulator Room
- BOP Control Room
- BOP House Top
- Cement Unit Room
- Change Room
- Cinema/Conference Room
- Client Office
- · Client's Store/Bosun's Locker
- CO2 Room
- Control Room Bridge
- Deck Office
- Derrick
- Drawworks House Top
- Driller's Store
- Driller's Store Top
- · Driller's Work Station
- Dry Store
- Electrical Equipment Room Port Forward 2nd Deck

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- Engine Control Room
- Engine Room Store Port
- · Equipment Room Forward of Driller's Store
- ET Room
- · Fuel Oil Purifier Room Port
- Galley
- Gymnasium/Sauna
- Helideck
- Hospital
- HPU Room Starboard
- · Laundry and Laundry Store
- Machine Shop
- MCC Center Port
- · Mechanical Shop
- Mess room
- Moonpool
- Mud Mixing Room
- Mud Pit Room
- Mud Pump Room
- Paint Locker
- Port Access Tunnel
- Port Aft Upper Deck
- Port Crane and Pedestal
- Port Forward Electrical Thruster Space Upper and Lower
- Port Forward Pump Room Upper and Lower
- Port Forward Upper Deck
- Rig Floor
- Roustabout Locker
- ROV Unit
- Sack Store
- Sewage Treatment Room
- Shale Shaker House
- · Ship Service Air Compressor Room Port
- Standby Generator Room
- Starboard Aft Upper Deck
- Starboard Forward Upper Deck
- · Starboard HVAC Space
- Subsea BOP Control Unit
- Subsea Tree Assembly Room
- Subsea Workshop
- · Switchgear Room Port
- · Transformer Room Starboard
- Warehouse
- Watermaker Room Port
- Welding Shop

Results

During the Compartment Survey, the team developed twenty seven (27) recommendations. Nine (9) of were for hazards ranked as 'Medium' Risk, fourteen (14) were for hazards ranked 'Low' Risk and four (4) were unranked. See the Recommendation Section below for the specific recommendations and their status in Appendix VI.

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INSTALLATION PERSPECTIVE

Process

The team assessed the major accident risks to the installation as a whole. The team discussed several Hazard Scenarios that could result in a Major Accident. The hazard, consequences, preventions and mitigations were recorded in a table. The hazards were ranked by Severity and Likelihood, and the Risk Rank was determined using a Risk Matrix. (The Risk Matrix can be found in Appendix II of this report).

List of Hazard Scenarios

The following is a list of the Hazard Scenarios assessed by the team. The table used to record assessment can be found in Appendix IV.

- Collision of vessel into rig
- · Helicopter collision other than the helideck
- Helicopter collision at helideck
- Reservoir blowout
- · Shallow gas blowout
- · Gas in riser
- Toxic gas release
- major structural failure
- · Severe weather including eddy currents
- · Loss of station keeping
- · Storage/use of radioactive material
- Storage/use of explosive material
- Dropped or fallen objects
- · Major fire and/or explosion at well test facility

Results

No recommendations were developed during the Installation Perspective assessment

SYSTEM PERSPECTIVE

Process

The team reviewed a number of critical systems for Major Accident Hazards. The hazard, consequences, preventions and mitigations for each system were recorded in a table. The hazards were ranked by Severity and Likelihood, and the Risk Rank was determined using a Risk Matrix. (The Risk Matrix can be found in Appendix II of this report).

List of Critical Systems

The following is a list of Critical Systems assessed by the team. The tables used to record the assessments can be found in Appendix V.

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- · Fire and gas detection and alarms
- · Telephone, PA, and general alarm
- · Driller's talkback (Echo) system
- Marisat, sat phone, vhf, etc.
- · Ballast/bilge equipment
- Ballast/bilge control
- Power generation
- Power management /distribution
- Engine cooling
- Salt water service
- Freshwater cooling
- Fire system
- HVAC and ventilation
- Fuel
- HP air
- Rig air
- Drilling
- Drilling equipment instrumentation
- Riser/diverter
- BOP systems
- Cranes
- · Escape and evacuation
- Station keeping

Results

No recommendations were developed during the Systems assessment.

RECOMMENDATIONS

During the entire Major Accident Hazard Risk Assessment, the team developed twenty seven (27) recommendations. None of the recommendations were for hazards ranked 'High' Risk, nine (9) were for hazards ranked as 'Medium' Risk, fourteen (14) were ranked 'Low' Risk and four (4) were unranked.

Each recommendation will become an Action Item and be assigned to a Responsible Person. Each recommendation will require follow up after which the results of the actions will be recorded and the report reissued. If no action was taken for a given recommendation, a reason must be recorded. The Recommendations and their status are presented in Appendix VI.

The recommendations are listed with their risk ranking and references to the Appendices where further information may be found in the following format [Risk Rank - Risk Category / Compartment, Global Scenario or Critical System, Appendix-Page]

1. Consider providing high voltage PPE for the A/C Unit Room. Also replace the sign detailing steps to take in an electrical shock situation with one having larger typeface.

[15 - Medium / Compartment, III-3]

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- 2. Consider providing a sign for the A/c Unit Room warning " Caution Hot Surfaces". [9 - Low/Compartment, III-3]
- 3. Consider providing high voltage PPE for the Auxiliary MCC Room. Also consider placement of a sign detailing steps to take in an electrical shock situation.
- [15 Medium / Compartment, III-9]
- 4. Consider the installation of a PPE box for the Battery Room. Also consider the installation of an evewash station for the Battery Room.
- [9 Low/Compartment, III-13]
- 5. Consider the placement of warning signs on the outside aft and fwd doors to the Cement Unit Room warning of high noise levels. [Unranked/Compartment, III-21]
- 6. Consider the installation of an approved flammables storage locker for the Port Crane pedestal. [9 - Low/Compartment, III-33]
- 7. Consider the installation of an approved flammables storage locker for the Driller's Store Room. [9 - Low/Compartment, III-43]
- Consider providing high voltage PPE for the electrical Equipment Room port fwd. Also consider placement of a sign detailing steps to take in an electrical shock situation. [15 - Medium / Compartment, III-49]
- 9. Consider the installation of an approved flammables storage locker for the Electrician's Shop. [9 - Low/Compartment, III-51]
- 10. Consider the installation of a PA speaker with adjustable volume in the hospital. [Unranked/Compartment, III-71]
- 11. Consider providing high voltage PPE for the HVAV Room. Also consider placement of a sign detailing steps to take in an electrical shock situation. I 15 - Medium / Compartment, III-75 1
- 12. Consider the installation of an approved flammables storage locker for the HVAC Room.
- [9 Low/Compartment, III-75]
- 13. Consider the provision of an approved oily waste disposal container for the Machine Shop.
- [9 Low/Compartment, III-79]
- 14. Consider the installation of an approved flammables storage locker for the Machine Shop
- [9 Low/Compartment, III-79]
- 15. Consider providing high voltage PPE for the MCC Room. Also consider placement of a sign detailing steps to take in an electrical shock situation.
- [15 Medium / Compartment, III-89]
- 16. Consider placing "Warning Hot Surfaces" signs on the mud lines in the mud mixing area of the Sack
- [9 Low/Compartment, III-97

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- 17. Consider provision of an approved flammables storage locker and an oily waster container for the Center Mud Pump Room
- [9 Low/Compartment
- 18. Consider the placement of a sign detailing the steps to take in an electrical shock situation in the port fwd Electrical Thruster space.
- [15 Medium/Compartment, III-109]
- 19. Consider the placement of a "High Voltage" warning sign on the door of the #1 Process Unit Room aft of the Bridge/CCR.
- [15 Medium/Compartment, III-111]
- 20. Consider the installation of a smoke detector in the ROV Control Van.
- [9 Low/Compartment, III-117]
- 21. Consider the provision of an oily waste disposal container for the Ship Service Air Compressor Room.
- [9 Low/Compartment, III-121]
- 22. Consider the provision of an oily waste disposal container for the Standby Generator Room.
- [9 Low/Compartment, III-127]
- 23. Consider the provision of an approved flammables storage locker for the Subsea Workshop.
- [9 Low/Compartment, III-133]
- 24. Consider the provision of high voltage PPE for the port 480v Switchboard Room
- [15 Medium/Compartment, III-135]
- 25. Consider extending the ladder from Thruster #5 lower space so that it extends above the deck in the upper part of the space so that hook up can be made more safely.

 [Unranked/compartment, III-137]
- 26. Consider providing high voltage PPE for the MCC Room. Also consider placement of a sign detailing steps to take in an electrical shock situation.
- [15 Medium / Compartment, III-141]
- 27. Consider special training for personnel in awareness of electrical shock and steps to take when finding a casualty (use of shepherd's crook). consider developing a presentation to run on the screen in the mess room.

[Unranked]

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APPENDIX I

TEAM MEMBER QUALIFICATIONS



APPENDIX I

Name:

Steve Cross

Position:

Toolpusher

Work History:

Toolpusher 1997 to present

Name:

Mike Marzolf

Position:

Master

Work History:

Master on Deepwater Horizon Nov 2000 to present

Chief Mate on Deepwater Millennium Nov 1999 - Oct 2000

Marine Pilot Oct 1987 - Nov 1999

Captain Crest Tankers Spring 1986 - Oct 1987

Third Mate, Second Mate and Chief Mate, various vessels 1978 - 1986

Name:

Peter Cyr

Position:

Chief Mate

Work History:

Chief Mate on Deepwater Horizon Nov 2000- present

Chief Mate on Deepwater Pathfinder Jan 2000 – Nov 2000 Second Mate/DPO on Deepwater Pathfinder 1998 – Jan 2000

DPO Trainee on Ioliar and Randgrid 1998

Control Room Operator on Jack Bates 1995 -1997

Name:

Kenneth - Peter Hildre

Position:

Chief Engineer/Maintenance Supervisor

Work History:

Chief Engineer/Maintenance Supervisor on Deepwater horizon Aug 2001 -

present

First Assistant Engineer on Deepwater Horizon Nov 2000 - Aug 2001

First Assistant Engineer on Seismic vessels 1998 – 2000

Second Assistant Engineer on Cruise vessels 1998

Second/Third Assistant Engineer on Chemical Tankers 1993 - 1998

Trainee Engineer on Supply vessels 1992 - 1993

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APPENDIX I

Name:

Steve Bertone

Position:

Electrical Supervisor

Work History:

Electrical Supervisor on Deepwater Horizon April 03 to present

Electrical Supervisor on Marianas April 02 to April 03 Chief Electrician on Marianas April 01 to April 02 Chief Electrician on Falcon 100 June 1998 to April 01

Journeyman Electrician 1995, Houston TX Apprentice Electrician 1991 to 1995, Houston TX

Name:

Richard Kennedy

Position:

Mechanical Supervisor

Work History:

Mechanical Supervisor on Deepwater Horizon 1999 - September 2003

US Navy, Engineering staff on Submarines, 20+ years

Name:

Tyson Cullum

Position:

RSTC

Work History:

RSTC on Deepwater Horizon Nov 2000 – present Safety Advisor on various vessels 1998 – 2000

H2S Technician (overseas) 1998 - 2000

Firefighter 1989 – 1997 Paramedic 1989 - present

Name:

Dan Vairo

Position:

Third Mate/DPO

Work History:

Third Mate/DPO on Deepwater Horizon May 02 - present

Third Mate on Deepwater Pathfinder Dec 00 - May 02

Name:

Mike Dow

Position:

Third Mate/DPO

Work History:

Third Mate/DPO on Deepwater Horizon Oct 02 - present

Third Mate/DPO on Deepwater Pathfinder July 02 – Oct 02 Third Mate/DPO on Deepwater Millennium Oct 01 – July 02

Supply vessel industry 1998 - Oct 01

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APPENDIX I

Name:

Lee Meyers

Position:

Roustabout

Work History:

Roustabout on Deepwater Horizon May 03 – present Ordinary Seaman on Cajun Express July 02 – May 03 Worked ashore (non oilfield) from Feb 01 to July 02

Rig Clerk July 1998 - Feb 01

Name:

Sammy Moore

Position:

MAHRA Facilitator

Work History:

18+ years in Marine Department on various rigs as AB Seaman, Bosun, BCO

and Barge Supervisor

2 years experience developing HSE Case Studies

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APPENDIX II

RISK MATRIX



APPENDIX II

RISK MATRIX

The Risk Matrix is 5 x 5 with Severity along one axis and Likelihood along the other. The team should rate the Severity and Likelihood of each hazard using the appropriate criteria below. The Severity is divided into three categories: People, Assets, and Environment. The team should use whichever category results in the highest (worst) Risk Category.

Severity Rankings (People)

- Slight (1) Hazard may reasonably result in a First Aid Case
- Minor (2) Hazard may reasonably result in a Medical Treatment Case
- Significant (3) Hazard may reasonably result in a Senous Injury Case
- Severe (4) Hazard may reasonably result in a Fatality
- Extremely Severe (5) Hazard may reasonably result in multiple Fatalities

Severity Rankings (Assets)

- Slight (1) Hazard may reasonably result in equipment damage and downtime totaling less than \$10,000
- Minor (2) Hazard may reasonably result in equipment damage and downtime totaling between \$10,000 and \$50,000
- Significant (3) Hazard may reasonably result in equipment damage and downtime totaling between \$50,000 and \$500,000
- Severe (4) Hazard may reasonably result in equipment damage and downtime totaling between \$500,000 and \$5,000,000
- Extremely Severe (5) Hazard may reasonably result in equipment damage and downtime totaling greater than \$5,000,000

Severity Rankings (Environment)

- □ Slight (1) Spill is contained onboard.
- ☐ Minor (2) Spill to the environment of less than 1 bbl
- Significant (3) Spill to the environment of 1 bbl to 5 bbl OR less than 1 ton
- □ Severe (4) Spill to the environment of 5 bbl to 100 bbl OR greater than 1 ton
- Extremely Severe (5) Spill to the environment of greater than 100 bbl

Likelihood Rankings

- □ Negligible (A) Incident not known to have occurred in the industry
- □ Low (B) Incident known to have occurred in the industry
- □ Medium (C) Incident occurs on the given rig
- High (D) Incident occurs as much as annually on the given ng
- Frequent (E) Incident occurs more than annually on the given rig

After the Likelihood and Severity Rankings for the Hazard are determined, use the Risk Matrix to determine the Risk Category. Always use the 'Highest' or worse seventy if the Seventy Rankings for People, Assets, and/or Environment are different.

There are three Risk Categories:

- □ Low (Risk Rankings 1 through 9)
- ☐ Medium (Risk Rankings 10 through 17)
- □ High (Risk Rankings 18 through 25)

Any hazards that have a Risk Category of 'High' require a Recommendation unless considered ALARP. The recommendation does not have to be a way to remove or mitigate a risk, but may be a recommendation to investigate a hazard or situation where the team may not have the time, resources, expertise etc.

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APPENDIX II

Any hazards that have a Risk Category of 'Medium' need to be reviewed by the team to determine if the risk is ALARP (As Low As Reasonably Practicable). If the risk is not considered ALARP, a recommendation should be made. This recommendation could be for hazard elimination, prevention, mitigation or for further investigation.

No recommendation is required for hazards that have a Risk Category of 'Low'. However, the team should make recommendations if the hazard can be eliminated or the risk reduced. 'Low' hazards should be managed for continuous improvement.

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0	Transocean

APPENDIX II RISK MATRIX

RISK MATRIX

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APPENDIX III
COMPARTMENT SHEETS

APPENDIX III

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COMPARTMENT A/C Unit Room						
NAME:			_			
LOCATION: 3 rd Deck, Port Side, across						
DIMENSIONS: 5.1m x 7.3m	MANNING: As i	required				
POWER / FLUID / CONTROL LINES:						
120V, Coolant Lines, Rig air, Fresh water, Drill water						
CONTROL SYSTEMS:	_					
CU-1 Control Panel						
HVAC / DUCTING:			_			
INVAC / DOCTING.						
LIVAC directions						
HVAC ducting						
PASSIVE FIRE PROTECTION:						
	Deckhead:	A-60	_			
Forward Bulkhead: A-60	Aft Bulkhead:	A-60				
Port Bulkhead: A-60	Starboard	A-60				
	Bulkhead:					
Comments / Recommendations						
False ceiling in space with a gap of approximately 1m.						
FIRE/GAS DETECTION:						
Space Duct		Space	Duct			
	Hydrocarbon Detector(s) 🗌				
	H ₂ S Detector(s)					
	Other:	_				
Smoke Detector(s)						
Comments / Recommendations Smoke detectors #ASH-172845 & ASH-172846						
Smoke detectors #ASH-172845 & ASH-172846						
FIRE FIGHTING EQUIPMENT:						
Space Adjace	ent	Space	Adjacent			
Dry Powder Extinguisher(s)	CO ₂ Extinguisher(×			
H ₂ O Extinguisher(s)	Foam					
	Extinguisher(s)		_			
Fixed H₂O (Deluge, Sprinklers, □	Fire Water Hose(s	s)				
etc.)						
Fixed Halon	Fixed CO ₂					
Other:						
Comments / Recommendations						
COMMUNICATIONS FTC .						
COMMUNICATIONS, ETC. : Telephone	☐ PA Spe	akar				
Telephone ☐ CCTV Fire Alarm Button ☐ Bilge Alarm		ncy Lighting				
GA Alarm Button General Alarm	Other:	ncy Lighting	H I			
OA AIGITI BUROIT	Li Cuiei.					
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APPENDIX III

Commonte / Bosommondations							
Comments / Recommendations							
ESCADE DOUTES							
ESCAPE ROUTES: Door exits inboard t	o passageway						
COMPARTMENT:	A/C Unit Room	and the second s					
FIRE:	· .						
	Ignition Sources / Fuel Preventions (Note EX equipment)						
Electric wiring shorts	Preventive maint			ions			
		, , , , , , , , , , , , , , , , , , , ,		2			
Consequences		Mitigations					
	to compartment/equipment	Firefighting capa	bilitie	<u></u>			
Possibility of injury to		Availability of me medivac			gnibu		
Risk 9 Rank:	Risk Category: Low		ALA	ARP?: Yes			
EXPLOSION:	1						
Ignition Sources / F	uel	Preventions (No	Preventions (Note EX equipment)				
- <u></u>							
Consequences	-	Mitigations					
Pick Cotogony							
Risk Risk Category: ALARP?: Yes							
FLOOD:							
Hazards		Preventions					
Ruptured , broken piping/valves		Preventive maintenance and inspections Corrosion control					
Consequences		Mitigations					
Damage to compartm	pent	Drainage system					
Damage to compartment			Monitoring of pressure on water systems				
Risk 1 Rank:	Risk Category: Low	ALARP?: Yes					
OTHER: Electrical st	nock. burns						
Hazards	,	Preventions					
Contact with live energy surfaces			Preventions Preventive maintenance and inspections				
Contact with hot surfaces			PPE, PTW, energy isolation				
Consequences		Mitigations		•			
Possibility of injury to	personnel		dical	treatment inclu	ıdina		
Possibility of fatality	potential	medivac	Availability of medical treatment including medivac				
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Risk 15	Risk Categor	rv: Med	ium		ALA	ARP?:	Yes	
Rank:	3	,					,	
RECOMMENDATION								
Consider providing hi		for this s	pace, als	so re	eplace the sign deta	ailing st	eps to ta	ike in high
voltage contact situat								
Consider labeling of I	not surfaces							
.=								
COMPARTMENT	Aft Lifeb	not Dock						
NAME:	All Lilebi	Dat Deck						
LOCATION:	Centerlin	e 2 nd Dec	k Aft	_				
DIMENSIONS:					MANNING: 0			_
POWER / FLUID / CO	ONTROL LINES	3:						
120v, 480v		_						
Rig air Lines Drill water Piping								
Pneumatic control lines								
CONTROL SYSTEM	<u> </u>							
Lifeboat Winch Controls	<u>. </u>							
ADCP Controls								
Lifeboat Battery Chargers CO2 Release for ECR								
COZ Neledate lor EGIN								
HVAC / DUCTING:							·	
None Open space - ambient								
Open space - ambient								
PASSIVE FIRE PRO								
Deck:	A-0					A-0		
Forward Bulkhead: Port Bulkhead:			1 '		Bulkhead: rboard			
Torr Buikinead.					khead:			
Comments / Recom	mendations							
							_	
FIRE/GAS DETECTI	ON: Space	Du	ıct			<u> </u>	Space	Duct
Constant Manning	Space	Du		Hvd	lrocarbon Detector(
Flame Detector(s)		Г		H ₂ S Detector(s)				
Heat Detector(s)				Other: Visible from ECR				
Smoke Detector(s)]					
Comments / Recom	mendations							
FIRE FIGHTING EQ	UIPMENT:							
		Space	Adjace	ent			Space	Adjacent
Dry Powder Extinguis	sher(s)			CO ₂ Extinguisher		(s)	\Box	
H₂O Extinguisher(s)					Foam		\Box	
Fixed H ₂ O (Deluge, Sprinklers,				Extinguisher(s) Fire Water Hose(s)				
etc.)	-ρι ΙΙΙΚΙ σ (3,				I HE WATEL HOSE	3)		
Fixed Halon					Fixed CO ₂			
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Other:			1	
Comments / Recon				
CO2 Release fo r the EC				
COMMUNICATIONS				
Telephone	⊠ cctv		eaker	
Fire Alarm Button GA Alarm Button	☐ Bilge Alarm ☐ General Alarm	☐ Emerg	gency Lighting	
Comments / Recon		□ J Otner.		
Telephone #267			_	
General Alarm Button #X				
Primary: Up ladders port				
Alternate: Forward into E	CR			
COMPARTMENT:	Aft Lifeboat Deck			
FIRE:				
Ignition Sources / I		Preventions (Note		
Diesel tanks in lifebo	oats	Preventive maintena Housekeeping	ance and inspect	ions
		riousekeeping		
Canaamus		Mitigations		
Consequences Damage to lifeboat		Firefighting capabilit		
Posssibility of injury	to personnel	Availability of medic	al treatment incl	udina
, , , , ,	,	medivac		3
Risk 9	Risk Category: Low	Al	ARP?: Yes	
Rank:				
EXPLOSION:		Daniel Alaka	EV '	
Ignition Sources / I	ruei	Preventions (Note	EX equipment)	
Concoguences		Mitigations		
Consequences		Mitigations		
Risk	Bick Catagony		LARP?: Yes/	No
Rank:	Risk Category:	A	LARPY: Yes/	NO
FLOOD:				
Hazards		Preventions		
Consequences		Mitigations		
Risk	Risk Category:	Al	ARP?: Yes/	No
Rank:				
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OTHER:				
Hazards		Preventions		
Consequences		Mitigations		
			_	
Risk	Risk Category:	AL	ARP?: Yes/I	No
Rank:				
RECOMMENDATION	NS:			
COMPARTMENT	At III Llait Dagge			
COMPARTMENT NAME:	AHU Unit Room			
LOCATION:	Dort 2nd dook awardom of	4		
	Port 2nd deck quarters, af m x 4.4m		Dogwisad	
POWER / FLUID / CO		WANNING: AS	Required	
120v. 480v	DNIROL LINES:			
1200, 4000				
CONTROL SYSTEM	S:			
#3 AHU Control Panel, 120v Dist. Panel (236403)				
Panel LP-028				
HVAC / DUCTING:				
Ventilation ducts				
D4000/E 5105 DD6				
PASSIVE FIRE PRO		Daaldaad.	A CO	
Deck:	A-60	Deckhead:	A-60	
Forward Bulkhead:	A-60	Aft Bulkhead:	A-60	
Port Bulkhead:	A-60	Starboard	A-60	
Comments / Recom	mandations	Bulkhead:		
Comments / Recom	menuations			
FIRE/GAS DETECTION				
0	Space Duct	Unides and are Data start	Space	Duct
Constant Manning		Hydrocarbon Detector	(s)	\vdash
Flame Detector(s)		H ₂ S Detector(s)		
Heat Detector(s)		Other:	_ ⊔	
Smoke Detector(s)				
Comments / Recom				
Smoke Detectors #ASH-17	72433 & ASH-172438			
	<u> </u>			
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FIRE FIGHTING EQ	UIPMENT:							
Dry Powder Extinguis H ₂ O Extinguisher(s)	sher(s)	Space	Adjacer		nguisher(s	s)	Space	Adjacent
Fixed H ₂ O (Deluge, §	Sprinklers,				er Hose(s)		
Fixed Halon				Fixed CO	O_2			
Other: Comments / Recom	mendations							
COMMUNICATIONS	, ETC. :							
Telephone		CCTV			PA Spea			\boxtimes
Fire Alarm Button		Bilge Alaı			Emerger	ncy L	ighting	\boxtimes
GA Alarm Button		General A	Alam	\boxtimes	Other:			
Comments / Recom	mendations							
ESCAPE ROUTES:								
Exit stbd to passageway			, ,,,					
	AHU Unit Roor	m						
FIRE:					/A.I. / =:	,		
Ignition Sources / F				Preventions				
Electric wiring shorts				Preventive maintenance and inspections				
Consequences	-			Mitigations				-
Damage to equipment/compartment				Firefighting of	anahilities			
Possibility of injury to		-		Availability o	f medical	trean	nent includ	ing medivac
Risk 9	Risk Catego	ry: Low			ALA	RP?	: Yes	
Rank:								
EXPLOSION:								
Ignition Sources / F	uel			Preventions	(Note EX	(equ	ipment)	
Consequences	_			Mitigations				
- Consequences				Mitigations			_	
Risk	Risk Catego	ry:			ALA	RP?	: Yes/N	lo
Rank:								
FLOOD:								
Hazards				Preventions				<u> </u>
				Drains.				
DET ((O)O) : 1:0								
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Consequences		Mitigations			
Risk	Risk Category:	ALARP?: Yes / No			
Rank:					
OTHER: Electrical	shock				
Hazards		Preventions			
Contact with live ene	rgy sources	PTW, energy isolation, PPE			
Consequences		Mitigations			
Possibility of injury to	personnel	Availability of medical treatment including			
Possibility of fatality		medivac			
Risk 15	Risk Category: Medium	ALARP?: Yes			
Rank:					
RECOMMENDATION	NS:				

COMPARTMENT Auxiliary Motor Control Room (MCC)- Port NAME:					
LOCATION:	2 rd Dook Aft noor Engin	o Control Boom			
	3 rd Deck Aft near Engin		D		
	x 4.2	MANNING: As	Required		
POWER / FLUID / CO	ONTROL LINES:				
11kV, 120V 230V					
CO2 lines Fresh water lines					
Fresh water lines					
CONTROL SYSTEM					
	ction box, Rig Air Compressor #4	PA 120V/230V Dist. Panel (2			
PA 120V Dist. Panel (2480 Main UPS Dist. Board, 11k		Power for HiTec, Drawworks Power for Lube Oil #1 and F			
Switches for supply fan SF		Network cabling	uei Oii #1 Seivice F	umps	
and exhaust fan EF-32	-50,	rtetront odomig			
HVAC / DUCTING:					
Ventilation fan					
Fire Dampers (FD-03, FD-0					
PASSIVE FIRE PRO					
Deck:	A-60	Deckhead:	A-60		
Forward Bulkhead:	A-60	Aft Bulkhead:	A-0		
Port Bulkhead:	A-60	Starboard	A-60		
		Bulkhead:			
Comments / Recom	mendations				
FIRE/GAS DETECTI	ON:				
	Space Duct		Space	Duct	
Constant Manning		Hydrocarbon Detector	r(s)		
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Transocea	an	MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON					APPENDIX III	
, managed		DEE	PWAIE	K H	URIZUN			
Flame Detector(s) Heat Detector(s) Smoke Detector(s)					S Detector(s) er:			
Comments / Recommen	ndations							
Smoke detectors ASH172905,	ASH172906,	& ASH17290	7					
FIRE FIGHTING EQUIPM	AERIT.				******			
FIRE FIGHTING EQUIP	VIENT:	Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher	(s)			· · · · ·	CO ₂ Extinguisi	her(s)		
H ₂ O Extinguisher(s)	\ -/				Foam			\square
		_			Extinguisher(s			
Fixed H ₂ O (Deluge, Sprir	ıklers,				Fire Water Hos	se(s)		
etc.) Fixed Halon					Fixed CO ₂			
Other:			Ιп		rixed CO ₂			
Comments / Recommen	ndations							
CO2 Fire Extinguisher #76								
CO2 release for Switchgear Ro Fire Station #26 in #3 Engine R	om (Port) in s	space						
COMMUNICATIONS, ET							_	
Telephone	\boxtimes	CCTV				Speake		\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alaı					Lighting	\boxtimes
GA Alarm Button		General A	Alam			er:		
Comments / Recommental Telephone #378	ndations							
Fire Alarm Buttons XS172918 8	XS172919							
ESCAPE ROUTES:			P. C. Carrier and Advanced					
Exit stbd fwd into passageway,), Exit aft	to Sw	itchgear Room, Exit	port to #	3 Engine Roo	<u>m</u>
COMPARTMENT: Aux	iliary MCC	Room						
FIRE:				_ D-	avantiana /Alat	. EV a	io	
Ignition Sources / Fuel Electric wiring short and	ewitchhoan	de			eventions (Note eventive mainte			ions
Liectic willing short and	SWILCHDOAN	us		[eventive manite	ilalice (and mopeci	ions
Consequences				Mi	tigations			
Possibility of damage to		nt/equipm	ent	Fit	refighting capabi	lities		
Possibility of injury to per	sonnel	• •		Αv	ailability of med	ical trea	atment inclu	ıding
					edivac			
Diek 0 D	als Catana			At	oility to effect rep			er
Risk 9 R Rank:	isk Catego	ory: Low			4	ALAKP	?: Yes	
EXPLOSION:								
Ignition Sources / Fuel				Pr	eventions (Note	e EX e	quipment)	
Electric wiring short and	switchboar	ds			eventive mainte			ions
Canacaucana				B.A.	Aire Aire and			
Consequences Possibility of damage to	compartmo	nt/equipm	ent		tigations refighting capabi	lities		
Possibility of injury to per		mvequipm	em	Av	ailability of med edivac	ical trea		
				AŁ	oility to effect rep	airs, re	direct powe	er
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Risk	9	Risk Category:	Low		ALARP?:	Yes	
Rank:							
FLOOD:							
Hazards				Preventions			
				Drains.			
Consequences				Mitigations			
Risk		Risk Category:			ALARP?:	Yes / No	
Rank:							
OTHER: Ele	ctrical sh	ock					
Hazards				Preventions	_		
Contact with	live ener	gy sources		PPE, PTW, energy isolation			
				Preventive maintenance and inspections			
						·	
Consequence	es			Mitigations			
Possibility of	injury to	personnel		Availability of me	dical treatme	ent including	
Possibility of	fatality			medivac		ŭ	
	•			Availability of hig	h voltage PP	E	
Risk	15	Risk Category:	Medium		ALARP?:	Yes	
Rank:							
RECOMMEN	DATION	S:		·			
Consider pro	viding his	h voltage PPE for	this space. Al	so consider placer	ment of a sign	n detailing steps to	
		ontact situations.		,		3	
	•						

COMPARTMENT	Auxiliary Derrick			
NAME:	-			
LOCATION:	Top of BOP House			
DIMENSIONS: 4m x 5	5m	MANNING:	As required	
POWER / FLUID / CON	TROL LINES:			
120V Rig air lines Hydraulic lines		Power for Fog Signal		
CONTROL SYSTEMS:				
Controls for fwd air tugger (I-1) Controls for aft air tugger (I-10 Radio Communications Juncti Hydraulic Lines for Auxiliary D Control cables for Auxiliary Dra	8-07) on Box (CJBAD06 rawworks			
HVAC / DUCTING:				
None - open air				

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APPENDIX III

PASSIVE FIRE PRO	TECTION:								
Deck:	A-0			Dec	khead:	-	N/A		
Forward Bulkhead:	N/A			Aft	Bulkhead:		N/A		
Port Bulkhead:	N/A		1	Sta	rboard		N/A		
				Bull	khead:				
Comments / Recom	mendations						_		
Outside space									
FIRE/GAS DETECTI	ON:								
TIKE OAD DETECT	Space	Du	ıct				Т	Space	Duct
Constant Manning				Нус	Irocarbon	Detector	(e)		
Flame Detector(s)			- I		Detector		(3)	H	H
Heat Detector(s)		-	╡ │		er:			H	
Smoke Detector(s)		-	┥	Oth	CI		-	Ш	
Comments / Recom	mendations								
Area visible to other work a		uently crewed	d						
FIRE FIGHTING EQU	JIPMENT:						•• • • • • • • • • • • • • • • • • • • •		
		Space	Adjace	ent				Space	Adjacent
Dry Powder Extinguis	sher(s)	\boxtimes			CO ₂ Exti	nguisher	(s)		
H₂O Extinguisher(s)					Foam		.		
					Extinguis	sher(s)			
Fixed H ₂ O (Deluge, S	Sprinklers,				Fire Wat	er Hose(s)		
etc.)									
Fixed Halon					Fixed CO	O_2			
Other:									
Comments / Recom									
Dry Chemical Extinguisher Fire Stations and Extinguish		. M-:- DI-							
		e Main Deck							
COMMUNICATIONS									
Telephone		CCTV			\boxtimes	PA Spe			\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alaı			닏	Emerge	ency L	Lighting	닏
GA Alarm Button		General A	Alam		\square	Other:		•	
Comments / Recom	mendations								
relepitorie #120									
ESCAPE ROUTES:									
Primary: Down ladder on fo	wd side of BOP Ho	ouse to Main	Deck						
Alternate: Down ladder on									
COMPARTMENT:	Auxiliary Demic	ck							
FIRE:	Donne			_					
Ignition Sources / F	uel			Pr	eventions	(Note F	X ear	iinment)	
Electric wiring shorts				Preventions (Note EX equipment) Preventive maintenance and inspections					
					ex rated eq		ioo ui	id mopoot	10113
					x rated oc	iaipinioni			
Consequences Mitigations									
	Possibility of damage to equipment Firefighting capabilities								
	Possibility of injury to personnel Availability of medical treatment including								
, , , , , ,	medivac					9			
Risk 9	Risk Catego	ry: Low		•		AL	ARP?	: Yes	
Rank:		,							
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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX III

EXPLOSION:				
Ignition Sources / Fu	iel	Preventions (Note EX equipment)		
Electric wiring shorts	-	Preventive maintenance and inspections		
Gas from the well		Eex rated equipment		
Consequences		Mitigations		
Possibility of damage		Firefighting capabilities		
Possibility of injury to	personnel	Availability of medical treatment including medivac		
Risk 9 Rank:	Risk Category: Low	ALARP?: Yes		
FLOOD:				
Hazards		Preventions		
		Drains.		
Consequences		Mitigations		
Risk Rank:	Risk Category:	ALARP?: Yes / No		
OTHER: Pressure		'		
Hazards		Preventions		
Rupture/break in hydra	aulic line	Preventive maintenance and inspections PPE, PTW, energy isolation		
Consequences		Mitigations		
Possibility of injury to	personnel	Availability of medical treatment including medivac		
Risk 6	Risk Category: Low	ALARP?: Yes		
Rank:				
RECOMMENDATION	S:			

COMPARTMENT NAME:	Battery Room			
LOCATION:	Port fwd main deck	k, stbd side of CCR/Bridge	e	
DIMENSIONS: 1.5m	x 1.5m	MANNING:	As required	
POWER / FLUID / CON	ITROL LINES:			
Power cables from batte	eries			
Cables for smoke and h	C detectors			
Cables for space heate	r			
·				

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APPENDIX I	I
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CONTROL SYSTEMS	3 :							
Switch for exhaust fan	-							
HVAC / DUCTING:								
Forced exhaust to dec	khead							
DACCIVE FIRE BROZ	FOTION							
PASSIVE FIRE PROT	A-60		1	Daa	khead:	A-60	<u> </u>	
Deck:					Rijeau. Bulkhead:			
Port Bulkhead:	Forward Bulkhead: A-60 Port Bulkhead: A-60				board	A-60		
Fort Buikileau.	A-00				thead:	A-00	•	
Comments / Recomm	nendations			Duir	dicau.			
Comments / Recomm	iiciidations							
FIRE/GAS DETECTION)N·						<u>_</u>	
TIND ON DETECTION	Space	Du	ıct				Space	Duct
Constant Manning				Hvd	rocarbon	Detector(s)		
Flame Detector(s)			ı l		Detector(Ħ	
Heat Detector(s)	l H		i Ι		er:		H	
Smoke Detector(s)			i l	Oth	oı			
Comments / Recomm	nendations							L
ASH 172210, CGD 17								
ASH 172210, CGD 17	2201							
	2201		A.d:					
ASH 172210, CGD 17	2201 IPMENT:	Space	Adjac	ent	00 5:4		Space	Adjacent
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish	2201 IPMENT:	Space	Adjac	ent	CO ₂ Exti	nguisher(s)	Space	Adjacent
ASH 172210, CGD 17	2201 IPMENT:	Space	Adjac	ent	Foam			
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s)	2201 IPMENT: ner(s)		Adjac	ent	Foam Extinguis	sher(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, S)	2201 IPMENT: ner(s)	Space	Adjac	ent	Foam Extinguis			
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.)	2201 IPMENT: ner(s)		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon	2201 IPMENT: ner(s)		Adjac	ent	Foam Extinguis	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other:	IPMENT: ner(s) prinklers,		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon	IPMENT: ner(s) prinklers,		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other:	IPMENT: ner(s) prinklers,		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other:	IPMENT: ner(s) prinklers, nendations		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomm	IPMENT: ner(s) prinklers, nendations		Adjac	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s)		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments	IPMENT: ner(s) prinklers, nendations			ent	Foam Extinguis Fire Wate	sher(s) er Hose(s) D ₂		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomment COMMUNICATIONS, Telephone Fire Alarm Button GA Alarm Button	IPMENT: ner(s) prinklers, nendations ETC.:	CCTV	m	ent	Foam Extinguis Fire Wate	sher(s) er Hose(s) D ₂		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomment COMMUNICATIONS, Telephone Fire Alarm Button	IPMENT: ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	ent	Foam Extinguis Fire Wate	PA Speaker Emergency		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomment COMMUNICATIONS, Telephone Fire Alarm Button GA Alarm Button	IPMENT: ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	ent	Foam Extinguis Fire Wate	PA Speaker Emergency		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments Telephone Fire Alarm Button GA Alarm Button Comments / Recomments / Re	IPMENT: ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	ent	Foam Extinguis Fire Wate	PA Speaker Emergency		
ASH 172210, CGD 17 FIRE FIGHTING EQU Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomment COMMUNICATIONS, Telephone Fire Alarm Button GA Alarm Button	IPMENT: ner(s) prinklers, nendations ETC.:	CCTV Bilge Alar	m		Foam Extinguis Fire Wate	PA Speaker Emergency I		

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COMPARTMENT: E	Battery Room					
FIRE:						
Ignition Sources / Fu	iel	Preventions (Note EX equipment)				
				,		
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
EXPLOSION:						
Ignition Sources / Fu	iel	Preventions (No	ote FX equip	nent)		
Battery gases, electric		Preventive maint				
Battery gases, electric	zai wiing anona	Treventive main	tenance and	inspections		
Consequences		Mitigations				
Damage to compartm	ent/equipment	Firefighting capa	bilities			
Possibility of injury to	personnel	Availability of me	edical treatme	ent including		
		medivac				
Risk 9	Risk Category: Low		ALARP?:	Yes		
Rank:						
FLOOD:			•			
Hazards		Preventions				
1.0		Drains.				
Consequences		Mitigations				
Consequences		Mitigations				
Diale	Bial Catanan		ALABDO.	Vac (No		
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
	shemisel huma					
OTHER: Toxic fumes	s, chemical burns	Dravantiana				
Hazards		Preventions PPE				
Exposure to battery gases Exposure to battery acid		Preventive maint	tenance and	inepactions		
Exposure to battery a	LIU .	Fleventive main	terrance and	mapections		
0		Mitigations				
Consequences	nomenal	Mitigations	owach static			
Possibility of injury to	personner	Availability of eyewash station Availability of medical treatment including medivac				
Risk 9	Risk Category: Low		ALARP?:	Yes		
Rank:						
RECOMMENDATION	IS:					

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APPENDIX	п
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Consider the installation of a PPE box for the Battery room . Also consider the installation of an eyewash station

COMPARTMENT NAME:	BOP Ac	cumulator	Room					
LOCATION:	Centerlin	ne 3 rd Dec	k- Forw	ard o	of the BOP Control	Roon	n	
DIMENSIONS:						requi		
POWER / FLUID / CO	ONTROL LINE	<u>s:</u>						
120V Rig air lines Pneumatic Control Lines Heater power supply cable High pressure air lines Cameron Controls supply cables								
CONTROL SYSTEM	<u>s.</u>				THE STATE OF THE S			
Accumulator Controls Diverter Controls Controls for Mixing System								
HVAC / DUCTING:								
HVAC ventilation ducts								
PASSIVE FIRE PRO	TECTION:	***						/
Deck:	A-0			Dec	ckhead:	A-60		
Forward Bulkhead:	A-60			Aft	Bulkhead:	A-60		
Port Bulkhead:	A-60			Sta	rboard	A-60		
				Bul	khead:			
Comments / Recom								
FIRE/GAS DETECT				_				
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s)	Space	Du		H ₂ S	drocarbon Detector 5 Detector(s) er:	(s)	Space	Duct
Comments / Recom Smoke Detectors #ASH-17		9 & ASH-172	2930					
FIRE FIGHTING EQU	JIPMENT:							
Dry Powder Extinguis H ₂ O Extinguisher(s)	sher(s)	Space	Adjac	ent]]	CO ₂ Extinguisher Foam Extinguisher(s)	` '	Space	Adjacent
Fixed H ₂ O (Deluge, S etc.)	Sprinklers,				Fire Water Hose(s)		
Fixed Halon Other:]	Fixed CO ₂			
Comments / Recom Nearest Fire Station is in the								
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APPENDIX	11
APPENDIA	11

COMMUNICATIONS,	ETC.:				
Telephone	CCTV			PA Speaker	\boxtimes
Fire Alarm Button	☐ Bilge Ala	am		Emergency Lighting	\boxtimes
GA Alarm Button	☐ General	l Alam	\boxtimes	Other:	
Comments / Recomi	mendations				
ESCAPE ROUTES:					
Primary: Exit aft into the BC	P Control Room, then stbd to	to the moonp	oool area		
	30P Accumulator Room	<u>n</u>			
FIRE:			-		
Ignition Sources / Fu	<u></u>			(Note EX equipment)	
Electric wiring shorts			Preventive m	naintenance and inspections	
Conconuences			Mitigations		
Consequences	to compartment/equipn	mont	Firefighting of	anahilities	
possibility of injury to		II C III		apabilities f medical treatment including	
possibility of injury to	pordonner		medivac	i modical deadlicht illouding	
Risk 9	Dick Category Lov		medivae	ALARP?: Yes	
Risk 9 Rank:	Risk Category: Lov	w		ALARP?: Yes	
EXPLOSION:					
Ignition Sources / Fu			Draventions	(Note EV equipment)	
ignition Sources / Ft	1CI		Pievelitions	(Note EX equipment)	
Consequences		_	Mitigations		
Risk	Risk Category:			ALARP?: Yes / No	
Rank:					
FLOOD:					
Hazards			Preventions		
			Drains.		
Consequences			Mitigations		
Consequences			mingunons		
Risk	Risk Category:			ALARP?: Yes / No	
Rank:	Lack Caragory.			122.11	
OTHER: Pressure					
Hazards			Preventions		
.,		_			

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APPENDIX	Ш	

Contact	ith live one				В	DTM ones	au inclotic		
Contact with live energy sources				PPE, PTW, energy isolation					
Rupture/broken high pressure piping/fittings				Preventive maintenance and inspections					
					8.03	tigations			
Conseque							P - 14 -		
Possibility	of injury to	personnei				ailability of me edivac	edical trea		ling
Risk	6	Risk Catego	ry: Low				ALARP?	?: Yes	
Rank:			<u> </u>	- # U_ U_ U_					
RECOMM	ENDATION	<u> </u>	_						
					F4X13.+4 =				
COMPAR NAME:	TMENT	BOP Co	ntrol Roor	n					
LOCATIO	N:	3 rd Deck	- Port Side	e outhos	o bne	f Moonpool			
DIMENSIO		0m x 11.20m	1 011 014	Course	U	MANNING:	As requi	red	
		ONTROL LINE	<u>s.</u>				7 to 10qui		
	and lighting ca				Powe	r cables for Mixin	a Unit		
BOP control	lines, fluid mix	ing lines			Mixin	g Unit control sign	als cables		
		supply cables				r cables for High			
Pump skid co	ontrol signals	cables umps 1,2, & 3			Power cables for hose fittings press Lube oil lines, pneumatic control lines				
Firemains p	supplies for Pi ower cables fo	umps 1,∠, & 3 or cutter and grinde	r			on nnes, pneuma ir, potable water li		es	
	LSYSTEM				rtig u	ii, potubie water ii	nes		
	e Test Pump			_					
Fluid Mixing	Controls	Controls							
BOP Pump (Controls								
HVAC / D	IICTING:								
HVAC ventila									
Fire Damper									
PASSIVE	FIRE PRO	TECTION:							
Deck:		A-0		_	Dec	khead:	A-60)	
Forward B	ulkhead:	A-60			Aft	Bulkhead:	A-0		
Port Bulkh	ead:	A-60			Sta	rboard	A-60)	
					Bull	khead:			
Comment	s / Recom	mendations		•					
FIRE/GAS	DETECTI								
		Space	Du	ıct				Space	Duct
Constant I						Irocarbon Dete	ector(s)		
Flame Det				_		Detector(s)			
Heat Dete				_	Oth	er:			
Smoke De									
		mendations							
Smoke Detec	ctors #ASH-17	'2926 & ASH-1729	27						
FIRE FIGI	TING EQL	JIPMENT:							
			Space	Adjac	ent			Space	Adjacent
Dry Powde	er Extinguis	her(s)				CO ₂ Extingui	sher(s)	\boxtimes	

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H ₂ O Extinguisher(s)		ΙП	П		Foam			ΙП	
					Extinguis	sher(s)			
Fixed H ₂ O (Deluge, S etc.)	Sprinklers,	⊔			Fire Wat	er Hose(s	5)		
Fixed Halon					Fixed Co	D_2			
Other: Comments / Recom									
Comments / Recom	mendations								
COMMUNICATIONS	ETC ·					-			
Telephone	<u> </u>	CCTV				PA Spe	aker		\boxtimes
Fire Alarm Button		Bilge Alaı	m		ă	Emerge		Lighting	⊠
GA Alarm Button		General A			\boxtimes	Other:			
Comments / Recom	mendations								
Telephone #369									
ESCAPE ROUTES:									
Primary: Stbd into Moonpo Alternate: Port into Passa									
					_				
	BOP Control R	oo <u>m</u>							
FIRE:	1			D		(NI=4= F)			
Ignition Sources / F Electrical wiring short					eventions			<i>uipment)</i> nd inspect	ions
Electrical willing Short	15			PI	eventive ii	iaintenan	ce a	nu mspeci	IUIIS
Consequences					tigations				
Damage to compart					efighting o				. di
Possibility of loss of E Possibility of injury to					anability o edivac	r medicai	trea	tment inclu	laing
1 ossibility of frigary to	personner					ontrol - R	OV	nterventio	n
Risk 17	Risk Catego	ry: Med	ium			ALA	RP?	: Yes	
Rank:	<u></u>								
EXPLOSION:				_					
Ignition Sources / F	uel			Pro	eventions	(Note E)	X eq	uipment)	
Consequences	_			Mi	tigations				
Risk	Risk Catego	ry:				AL	ARP	?: Yes /	No
Rank:	L								
FLOOD:				D	eventions				
Hazards		_			eventions ains.	•	_		
					unio.				
Consequences				Mi	tigations				
Consequences					ingulions				
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APPENDIX III

Risk Rank:	Risk Category:	ALARP?: Yes / No
OTHER: Pressure		
Hazards		Preventions
Contact with live ener	gy sources	PPE, PTW, energy isolation
Broken/ruptured hp lir	nes/fittings	Preventive maintenance and inspections
Consequences		Mitigations
Possibility of injury to	personnel	Availability of medical treatment including medivac
Risk 6 Rank:	Risk Category: Low	ALARP?: Yes
RECOMMENDATION	S:	

COMPARTMENT Bridge/ CCR		
NAME:		
LOCATION: Port forward main deck		
DIMENSIONS: 18m x 9m x 4.5m	MANNING:	Two on watch 24 hrs. a day
POWER / FLUID / CONTROL LINES:		
Overhead: Air line controlling air dampers, ventilation		
Below deck – Helideck drain lines, air conditioner cond		
Network cables, sound powered telephone junction bo	xes and power cal	bling. 120v
CONTROL SYSTEMS:		
SDP, SVC, STC and SSS operator stations. Fixed VH		
Current profiler. Helideck, CCR perimeter, spotlight an	d deck lighting par	nels. Fire & Gas/ ESD Panel.
Forward/ aft radar consoles. 2 x GPS, CCTV, Air/ Elec	. Horn controls, U	PS #9.
HVAC / DUCTING:		
Fire dampers #49 and #50- controlled locally near stbo		
FZ-172001), Fire and Gas outputs F (SOV-172201) ar	nd in the SVC ESD	page
PASSIVE FIRE PROTECTION:		
Deck: A60 Bulkheads	Deckhead:	A60
Forward Bulkhead: A60 bulkheads and	Aft Bulkhead:	A60 bulkhead
windows		
Port Bulkhead: A60 bulkheads and	Starboard	A60 bulkhead and windows
windows	Bulkhead:	
Comments / Recommendations		
FIRE/GAS DETECTION:		

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Duct

Space

Space

Duct

Constant Manning Grame Detector(s) Grame	Transoce	Transocean MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON				D			APPENDIX II	
FIRE FIGHTING EQUIPMENT: Dry Powder Extinguisher(s) Garage CO2 Extinguisher(s) Garage CO3 Extinguisher(s) Garage Gar	Flame Detector(s) Heat Detector(s) Smoke Detector(s)				H ₂ S	S Detector	(s)	(s) -		
Space Adjacent CO2 Extinguisher(s) H2O Extinguisher(s)	Comments / Recomm	enuations								
Dry Powder Extinguisher(s)	FIRE FIGHTING EQUI	PMENT:			2.2830					
Fixed H2O (Deluge, Sprinklers, etc.) Fixed Halon Other:		er(s)	Space	Adjac	ent	Foam		(s)		Adjacent
Fixed Halon Other: Comments / Recommendations COMMUNICATIONS, ETC.: Telephone		rinklers,						s)		
Telephone	Fixed Halon			l		Fixed Co	02			
Telephone										
Fire Alarm Button GA Alarm Button General Alarm General General Alarm General Genera			00714							K-3
ESCAPE ROUTES: Port and Stbd to main deck, Stbd aft 2 nd deck entry through watertight door/radio room/door to lifeboat deck COMPARTMENT: Bridge/CCR FIRE: Ignition Sources / Fuel	Fire Alarm Button	\boxtimes	Bilge Alaı				Emerge Other:T	ncy i	Lighting Combustib	\boxtimes
Port and Stbd to main deck, Stbd aft 2 nd deck entry through watertight door/radio room/door to lifeboat deck COMPARTMENT: Bridge/CCR FIRE: Ignition Sources / Fuel	Comments / Recomm									
FIRE: Ignition Sources / Fuel	Port and Stbd to main of deck		ft 2 nd deck	entry thi	roug	h watertig	ht door/ra	dio r	oom/door t	o lifeboat
Ignition Sources / Fuel Heli-fuel piping over CCR. Class A material Electrical wiring/short in equipment Consequences Failure or loss of DP, or SVC controlled systems commanded by CCR. Loss of communications from CCR. Unable to operate BOP contr. from CCR. Possibility of injury to personnel Risk 14 Risk Category: Medium Risk 14 Risk Category: Medium Risk 14 Risk Cate		nage/CCR								
Consequences Failure or loss of DP, or SVC controlled systems commanded by CCR. Loss of communications from CCR. Unable to operate BOP contr. from CCR. Possibility of injury to personnel Risk 14 Risk Category: Medium Rank: EXPLOSION: Ignition Sources / Fuel Helicopter crash (major hazard tables) Housekeeping Mitigations Firefighting capabilities Transfer control of these systems to ECR/ Drill Floor. Full A60 perimeter rating. Availability of medical treatment including medivac ALARP?: Yes Preventions (Note EX equipment) Mitigations ALARP?: OF		el			Pr	eventions	s (Note E	X eq	uipment)	
Failure or loss of DP, or SVC controlled systems commanded by CCR. Loss of communications from CCR. Unable to operate BOP contr. from CCR. Possibility of injury to personnel Risk 14 Risk Category: Medium Rank: EXPLOSION: Ignition Sources / Fuel Helicopter crash (major hazard tables) REVISION NO: 01 Firefighting capabilities Transfer control of these systems to ECR/ Dnill Floor. Full A60 perimeter rating. Availability of medical treatment including medivac ALARP?: Yes Preventions (Note EX equipment) Mitigations	Class A material							ice a	nd inspecti	ons
commanded by CCR. Loss of communications from CCR. Unable to operate BOP contr. from CCR. Possibility of injury to personnel Risk 14 Risk Category: Medium Rank: EXPLOSION: Ignition Sources / Fuel Helicopter crash (major hazard tables) REVISION NO: 01 Transfer control of these systems to ECR/ Dnll Floor. Full A60 perimeter rating. Availability of medical treatment including medivac ALARP?: Yes Preventions (Note EX equipment) Mitigations	Consequences									
Rank: EXPLOSION: Ignition Sources / Fuel Preventions (Note EX equipment) Helicopter crash (major hazard tables) Consequences Mitigations REVISION NO: 01 PAGE OF	Failure or loss of DP, or SVC controlled systems commanded by CCR. Loss of communications from CCR. Unable to operate BOP contr. from CCR.				Transfer control of these systems to ECR/ Drill Floor. Full A60 perimeter rating. Availability of medical treatment including					
Preventions (Note EX equipment) Helicopter crash (major hazard tables) Consequences Mitigations REVISION NO: 01 PAGE OF		Risk Catego	ory: Med	lium			AL	ARP1	?: Yes	
Helicopter crash (major hazard tables) Consequences Mitigations REVISION NO: 01 PAGE OF							<u>'</u>			
REVISION NO: 01 PAGE OF			es)		Pr	eventions	s (Note E	X eq	uipment)	
	Consequences				Mi	tigations	_			
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Risk	Risk Category:		ALARP?: Yes / No
Rank:			
FLOOD:			
Hazards		Preventions	
Leaking Pot water line	es	Preventive mainte	enance and inspections
	rain or sea water ingress.		•
	· ·		
Consequences		Mitigations	
Effects on electrical co	omponents in CCR	Drains.	
m:-1 0	D- 1 0 1		AL ADDO
Risk 2	Risk Category: Low		ALARP?: Yes
Rank:			
OTHER:		Danie	
Hazards		Preventions	
Canacaucan		Mitigations	
Consequences		Willigations	
Risk	Risk Category:		ALARP?: Yes / No
Rank:	Kisk Calegory.		ALAKP . Tes / No
RECOMMENDATION	<u> </u>		
RECOMMENDATION			
COMPARTMENT	Cement Room		
NAME:			
LOCATION:	Stbd Mud Module Main	Deck	
DIMENSIONS: 6m	x 10m x 4m		0
DOMED (FILLID (CO			

COMPARTMENT Cement Room	
NAME:	
LOCATION: Stbd Mud Modu	le Main Deck
DIMENSIONS: 6m x 10m x 4m	MANNING: 0
POWER / FLUID / CONTROL LINES:	
120V, 480V	Power and control cables for SVC-OS-07
Mud, drill water, bulk, rig air, pot water	Power and control cables for Cement Tanks
Sea water, fire main	Pneumatic Control Lines
Heater power supply cables	Power cables for Mud Pit Exhaust Fans
	Fire Main
CONTROL SYSTEMS:	
Halliburton Control Unit	Control for Exhaust Fan EF-23
SVC OS-07, Cement Day Tank Weight Sensors	Control for Supply Fan SF-22
Emergency light panels, Panel LP-001 (236001)	Instrument Junction Boxes
	Cement 480V Panel (236501)
HVAC / DUCTING:	
HVAC Ventilation Ducting	
Mud Pit Room Exhaust Ducts	

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APPENDIX	(1)
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PASSIVE FIRE PRO	TECTION:	• • • •									
Deck:	A-0			Deckhead: A-0							
Forward Bulkhead:	A-0			Aft Bulkhead: A-0							
Port Bulkhead:	A-0		ŀ	Starboard A-0							
				Bul	khead:						
Comments / Recommendations											
FIRE/GAS DETECTION	ON:										
	Space	Du	ct				Space	Duct			
Constant Manning				Hyd	Irocarbon Detec	ctor(s)					
Flame Detector(s)					Detector(s)	` '					
Heat Detector(s)]	Oth	er:						
Smoke Detector(s)											
Comments / Recom											
Heat Detector #TSH-17232		C 0 ACH 47	2204								
Smoke Detectors #ASH-17 FIRE FIGHTING EQU		0 & ASH-172	2324								
FIRE FIGHTING EQU	DIPINIENT:	Snace.	Adjac	ont			Snace	Adiacont			
Dry Powder Extinguis	hor(s)	Space	Aujac	ent	CO ₂ Extinguis	hor(c)	Space	Adjacent			
H ₂ O Extinguisher(s)	iner(s)	H			Foam	ner(s)					
11/20 Extinguisher(5)					Extinguisher(s	4					
Fixed H ₂ O (Deluge, S	prinklers.				Fire Water Ho						
etc.)	,					(-)	_				
Fixed Halon					Fixed CO ₂						
Other:					_		_				
Comments / Recom	mendations						•				
COMMUNICATIONS	, ETC. :										
Telephone	\boxtimes	CCTV			PA:	Speake	r	\boxtimes			
Fire Alarm Button		Bilge Alaı			☐ Eme	ergency	Lighting	\boxtimes			
GA Alarm Button		General A	Alam		⊠ Oth	er:					
Comments / Recom	mendations										
Telephone #145											
ESCAPE ROUTES:											
Primary: Exit Stbd onto Ma	ain Deck near Hall	burton Unit									
Alternate: Exit Forward ont	o Main Deck at Pi	e Storage									
Alternate: Exit aft onto Mai											
COMPARTMENT:	Cement Unit R	oom									
FIRE:				-							
Ignition Sources / F	uel				eventions (Not						
Electric wiring/shorts				Preventive maintenance and inspections							
Hydraulic fluid,				Housekeeping							
Gas from the well				Well control procedures, gas handling				3			
				Ventilation							
0					4141						
Consequences					tigations	ililiaa					
Damage to compartm		1	_	Fir	efighting capab		otmont inclu				
				Fir Av			atment inclu	ding			
Damage to compartment Possibility of injury to Risk 14			lium	Fir Av	efighting capab ailability of med edivac			ding			
Damage to compartment Possibility of injury to Risk 14 Rank:	personnel		lium	Fir Av	efighting capab ailability of med edivac	lical tre		ding			
Damage to compartment Possibility of injury to Risk 14 Rank: EXPLOSION:	Personnel Risk Catego		lium	Fir Av me	efighting capab ailability of med edivac	ALARF	??: Yes	ding			
Damage to compartment Possibility of injury to Risk 14 Rank: EXPLOSION: Ignition Sources / F	Risk Catego		lium	Fir Av me	efighting capab ailability of med edivac	ALARF	??: Yes				
Damage to compartment Possibility of injury to Risk 14 Rank: EXPLOSION:	Personnel Risk Catego		lium	Fir Av me	efighting capab ailability of med edivac	ALARF	??: Yes	ding			





Electric wiring/shorts Gas from the well Consequences Damage to compartment		Preventive maintenance and inspections Housekeeping Well control procedures, gas handling Ventilation Mitigations Firefighting capabilities			
Possibility of injury to	personnel	Availability of me medivac	edical treatment including		
Risk 14 Rank:	Risk Category: Medium		ALARP?: Yes		
FLOOD:		Duningtions			
Hazards		Preventions Drains			
Consequences		Mitigations			
Risk Rank:	Risk Category:		ALARP7: Yes / No		
OTHER: Pressure, ch	nemicals				
Hazards	,	Preventions			
Contact with live energ	gy sources	PPE, PTW, energy isolation			
Exposure to chemicals		Preventive maintenance and inspection including			
High pressure piping v	valves	ultrasound of piping			
Consequences		Mitigations			
Possibility of injury to	personnel	Availability of MSDS information			
Possibility of fatality		Availability of me medivac	edical treatment including		
Risk 15 Rank:	Risk Category: Medium		ALARP?: Yes		
RECOMMENDATION	S:				
		de aft and fwd dooi	s to the Cement Unit warning of		

COMPARTMENT	Change Room, Secon	nd Deck	
NAME:			
LOCATION:	2 nd deck, accommoda	ation block, port aft	
DIMENSIONS:	Approx. 5m x 3.5m	MANNING:	Intermittent
POWER / FLUID /	CONTROL LINES:		
Pot water, sewage line	s, 120V outlet		

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APPENDIX	11
APPENDIA	ш

CONTROL SYSTEM							
Light switches							
HVAC / DUCTING:							
Fire zone F-07		.,					
PASSIVE FIRE PRO	TECTION:						
Deck:	A-0		De	eckhead:	A-0		
Forward Bulkhead:	B-30			t Bulkhead:)	
Port Bulkhead:	A-0		St	arboard	B-30)	
			Βι	ılkhead:			
Comments / Recomm	mendations						
FIRE/GAS DETECTION							
0	Space	Du			D	Space	Duct
Constant Manning			Hydrocarbon Detector(s)			님	
Flame Detector(s) Heat Detector(s)				S Detector		님	
Smoke Detector(s)			~	her:		Ш	
Comments / Recomm	mendations						
ASH 172438	nendations						
FIRE FIGHTING EQU	JIPMENT:		A -12				A -1:
Day Dayidaa Estinavia	h = =(=)	Space	Adjacent		::- -	Space	Adjacent
Dry Powder Extinguis H ₂ O Extinguisher(s)	ner(s)			Foam	inguisher(s)	l H	l H
		🖰		Extingui	cher(c)		
Fixed H₂O (Deluge, S	prinklers				ter Hose(s)		
etc.)	prantiors,			1 110 110			
Fixed Halon				Fixed Co	O_2		
Other:							
Comments / Recomments	mendations						
COMMUNICATIONS	FTO .						
COMMUNICATIONS Telephone	, E I C. :	CCTV			PA Speaker	_	
Fire Alarm Button	片	Bilge Alaı	m	H	Emergency		
	片	General A		×	Other:	Lighting	Ä
GA Alarm Button	1 1 1		11541111	V N			
GA Alarm Button Comments / Recomments	mendations	Conorary					
GA Alarm Button Comments / Recomments	mendations	- Contrain					
Comments / Recomments	mendations	- Comoran					
Comments / Recomments / Recomme							
Comments / Recomments	imary – Forward t	o transit roon	n then out to I		k		

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COMPARTMENT: Change Room 2 nd Deck						
FIRE:						
Ignition Sources / Fu	ıel	Preventions (No	te EX equipm	ent)		
Consequences		Mitigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank:	Risk Category.		ALAKP 1.	Tes / No		
EXPLOSION:						
Ignition Sources / Fu	iel	Preventions (No	te EX equipm	ent)		
			*			
Consequences		Mitigations				
Consequences		Willigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank: FLOOD:						
Hazards		Preventions				
Hazarus		Drains.				
		Brains.				
Cancamianasa		Midianadiana				
Consequences		Mitigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank:						
OTHER: Biological, c	hemical	D				
Hazards Exposure to sewage v	while making repairs	PPE PPE				
Exposure to cleaning	chemicals	PPE				
- Francisco Statisting						
Consequences		Mitigations				
Possibility of injury to	personnel/long term health	Availability of med				
effects		Availability of MS				
Risk 13	Risk Category: Medium		ALARP?:	Yes		
Rank:						
RECOMMENDATION	S:					

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Transocean	MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON	APPENDIX III

COMPARTMENT NAME:	Cinema / Co	onferer	nce roor	n				
LOCATION:	Fwd mid-shi	wd mid-ships port side of mess-deck						
DIMENSIONS: 13.5m X	8m				MANNING:	Intermitte	ent	_
POWER / FLUID / CONTR	ROL LINES:							
Network cables and power	cables							
CONTROL SYSTEMS:								
Watch call alarm system								
HVAC / DUCTING:	_			_				
Air condition and fire damp	ers		_				_	
PASSIVE FIRE PROTECT	ION:			-				
Deck: A				Dec	khead:	A		
Forward Bulkhead: B-3	30			Aft I	Bulkhead:	B-30		
Port Bulkhead: C				Star	board	B-30		
				Bull	khead:			
Comments / Recommend	lations							
FIRE/GAS DETECTION:				_			_	
	Space	Du	ct				Space	Duct
Constant Manning			_		rocarbon Detec	tor(s)		
Flame Detector(s)]		Detector(s)			
Heat Detector(s)]	Oth	er:			
Smoke Detector(s)	\square							
Comments / Recommend	lations							
FIRE FIGHTING EQUIPMI	ENT:							
	S	pace	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(s	5)				CO ₂ Extinguisl	her(s)		
H ₂ O Extinguisher(s)					Foam			
		_			Extinguisher(s			_
Fixed H ₂ O (Deluge, Sprink	lers,	\boxtimes			Fire Water Ho	se(s)		\boxtimes
etc.)					Fixed CO			
Fixed Halon Other:		$H \mid$			Fixed CO ₂			
Other:		LJ						

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APPENDIX III	

Comments / Recomm	nendations			
COMMUNICATIONS	ETC .			
COMMUNICATIONS,			ookor	$\overline{}$
Telephone	CCTV	☐ PA Sp		
Fire Alarm Button	Bilge Alarm		jency Lighting	Ä
GA Alarm Button	General Alarm	Other:		
Comments / Recomm	mendations			
ESCAPE ROUTES:				
Follow Exit signs to th	e main deck			
			_	
	Cinema /Conference Room			
FIRE:		1 =		
Ignition Sources / Fu	ıel	Preventions (Note		
Electric wiring shorts		Preventive maintena	ance and inspect	tions
Class A materials		Housekeeeping		
Consequences		Mitigations		
Damage to compartm	ent	Firefighting capabili		
Possibility of injury to	personnel	Availability of medic medivac	al treatment incl	uding
Risk 9	Risk Category: Low	Al	ARP?: Yes	
Rank:				
EXPLOSION:				
Ignition Sources / Fu	iel	Preventions (Note	EX equipment)	
Consequences		Mitigations		
Risk	Risk Category:	Δ	LARP?: Yes/	No
Rank:				
FLOOD:]			
Hazards		Preventions		
1 14241 43		Drains.		
		Diailio.		
Consequences		Mitigations		
Risk	Rick Catagory	Ai	ABD2: Va- /	No
Rank:	Risk Category:	AI	_ARP?: Yes /	
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OTHER:					
Hazards			Preventions		
11424740			1 10 10 110 110		
Consequences			Mitigations		
Consequences	_		Willigations		
Risk	Risk Category:			ALARP?: Yes/	No.
Rank:	Misk Calegory.			ALARPY: 165/	INO
RECOMMENDATION	Ne.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
RECOMMENDATION	<u>vo:</u>				
1/4114/1911					
COMPARTMENT NA					
LOCATION: Fwd of	Port Change Roo	m 2nd deck			
DIMENSIONS: 8.5			MANNING:	Intermittent	
POWER / FLUID / CO	ONTROL LINES:				
120v					_
CONTROL SYSTEM	٠.				
CONTROL STOTEM	J.				
LIVAG / DUGTING					
HVAC / DUCTING:					
Air conditioning ducts	;				
PASSIVE FIRE PRO	TECTION				
Deck:	A		Overhead:	A	
Forward Bulkhead:	ĉ		Aft Bulkhead:	ĉ	
Port Bulkhead:	A-60		Starboard	B-30	
Port Buikileau.	A-00		Bulkhead:	D-30	
Comments / Recom	mondations		Duikilead.		
Comments / Necom	iliciluations				
FIRE/GAS DETECTI					
	Space	Duct		Space	Duct
Constant Manning		_	Hydrocarbon Dete	ctor(s)	
Flame Detector(s)			H ₂ S Detector(s)		
Heat Detector(s)		닏	Other:	凵	
Smoke Detector(s)		L			
Comments / Recom	mendations				
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APPENDIX III	
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FIRE FIGHTING EQU	JIPMENT:						
Dry Powder Extinguis H ₂ O Extinguisher(s)	her(s)	Space	Adjacent		nguisher(s)	Space □ ⊠	Adjacent
Fixed H ₂ O (Deluge, S	prinklers,	\boxtimes			er Hose(s)		\boxtimes
etc.) Fixed Halon Other:				Fixed CO)2		
Comments / Recomi	mendations						
COMMUNICATIONS,	, ETC. :						
Telephone	\boxtimes	CCTV			PA Speaker		\boxtimes
Fire Alarm Button		Bilge Alaı			Emergency I	_ighting	\boxtimes
GA Alarm Button		General A	Alarm		Other:		
Comments / Recomi	mendations						
ESCAPE ROUTES:	-	TTIME. HAM LESS II	1. 11.1.00% (***********************************				
Door way to the passa	age way, forwa	ard to fwd I	boat deck;	aft to stairwa	ay to main de	ck	
	Client Office						
FIRE:							
Ignition Sources / Fu	uel				(Note EX equ		
Electric wiring/short					aintenance a	nd inspectio	ns
Class A material				ousekeepin	g		
Consequences				litimatia na			
Damage to equipmen	t/compartment	<u> </u>		litigations irefighting c	ana bilitiaa	_	
Possibility of injury to			A		medical treat	ment includ	ing
Risk 9 Rank:	Risk Catego	ery: Low			ALARP?	: Yes	
EXPLOSION:							
Ignition Sources / Fu	iel		P	reventions	(Note EX equ	uipment)	
Consequences	= 1 = W = Milder/m		M	itigations			
Risk	Risk Catego	ory:			ALARP?	P: Yes/N	0
Rank:							
FLOOD:							
Hazards			P	reventions			

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			Drains.		
Consequences			Mitigations		
Risk	Risk Ca	ategory:		ALARP	?: Yes / No
Rank:					
OTHER:					
Hazards			Preventions		
Consequences			Mitigations		
Risk Rank:		ategory:		ALARP	?:
RECOMMENDATIO	NS:				

MAJOR ACCIDENT HAZARD

COMPARTMENT	Client Store Room			
NAME:				
LOCATION:				
DIMENSIONS: 5.2	2 X 7.70	MANNING:	Intermittent	
POWER / FLUID / CO	ONTROL LINES:			
120v, base oil, rig air	seawater, fire water			
	, , -			
CONTROL SYSTEM	c.			
CONTROL STSTEM	<u> </u>			
HVAC / DUCTING:				
Overhead: airline cor	trolling dampers and ventilation	on ducting - Fire dam	per #36 and #31	
PASSIVE FIRE PRO	TECTION:			
Deck:	A-0	Overhead:	A-0	
Forward Bulkhead:	B-0	Aft Bulkhead:	A-0	
Port Bulkhead:	A-0	Starboard	A-0	
		Bulkhead:		

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APPENDIX !	Ш	
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Comments / Recommendations								
FIRE/GAS DETECTION	ŌN:						,	
	Space	Du					Space	Duct
Constant Manning					rocarbon Detect	or(s)	님	│ │ │ │
Flame Detector(s)		<u> </u>			Detector(s)		님	片
Heat Detector(s)		<u> </u>	-	Oth	er:		Ш	
Smoke Detector(s)	<u>\</u>	L						
Comments / Recomi	nendations							
FIRE FIGURING FOL	UDATE NA							
FIRE FIGHTING EQU	JIPMENI:	Space	Adjace	ent_	_		Space	Adjacent
Dry Powder Extinguis	her(s)		Aujace	,,,,	CO ₂ Extinguish	er(s)		
H ₂ O Extinguisher(s)	1101(3)	H			Foam	0.(0)		1 1 1
1120 Examplianor(a)	i				Extinguisher(s)		<u> </u>	
Fixed H ₂ O (Deluge, S	prinklers,				Fire Water Hos			
etc.)								
Fixed Halon		님			Fixed CO ₂			
Other:					<u> </u>			
Comments / Recom		shomical t	fire extin	auic	har and Eira Sta	tion #16	8	
Located in the passag	geway is a Dry C	memican	ille extili	yuis	iller and File Sta	111011#10	5	
COMMUNICATIONS	, ETC. :						A LONG LONG LONG LONG LONG LONG LONG LONG	
Telephone		CCTV			☐ PA S	peaker		\boxtimes
Fire Alarm Button		Bilge Alar			☐ Eme	rgency	Lighting	\boxtimes
GA Alarm Button	-	General A	Alam		Othe	r:		
Comments / Recommendations								
ESCAPE ROUTES:				_				
Take stairwell, locate	d outside client	store doo	r, to the	mai	n deck or go fwd	throug	h accomm	odations
	Client Store				4.11			
FIRE:								
Ignition Sources / Fi	uel				eventions (Note			
Electric wiring/shorts					eventive mainter	nance a	nd inspecti	ons
Class A material				Ho	usekeeping			
Consequences				Mi	tigations			
Possibility of damage	to equipment/c	ompartme	ent	_	efighting capabil	ities		
	, .	·		Availability of medical treatment including				iding
				me	edivac			
Risk 9	· · · · · · · · · · · · · · · · · · ·							
Rank: EXPLOSION:								
Ignition Sources / Fo	uel			Pr	eventions (Note	EX ea	uinment)	
-ginaon Joures / I				- 1	<u> </u>	-x 64	а <i>ртион</i> ст	
	-							
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Risk F Rank: FLOOD: Hazards	tisk Category:	Preventions Drains. Mitigations
Rank: FLOOD: Hazards	tisk Category:	Preventions Drains.
Rank: FLOOD: Hazards	tisk Category:	Preventions Drains.
FLOOD: Hazards		Drains.
Hazards		Drains.
		Drains.
Consequences		
Consequences		Mitigations
Risk F	tisk Category:	ALARP?: Yes / No
OTHER:		
Hazards		Preventions
Consequences		Mitigations
Risk R	isk Category:	ALARP?:
Rank:		
RECOMMENDATIONS:		

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HVAC / DUCTING:									
Natural supply / Mechanical ex	haust FD's 49	& 50 Fan c	ontrol out	side s	pace				
PASSIVE FIRE PROTE				_			• •		
	A-60				khead:		A-60		
	A-60			Aft Bulkhead: A-60 Starboard A-60					
Port Bulkhead:	A-60				khead:		A-60		
Comments / Recomme	ndations			Bui	KIICau.				
Comments / Recomme	iluutions								
FIRE/GAS DETECTION									
TIKE OAO BETEOTION	Space	Du	ct					Space	Duct
Constant Manning				Hvo	frocarbon	Detector	(s)	Π	
Flame Detector(s)			1		Detector		`		
Heat Detector(s)			<u> </u>		er:				
Smoke Detector(s)			j				_	_	_
Comments / Recomme	ndations								
ASH-172317									
FIDE FIGURING FOUR	AAFAIT.								
FIRE FIGHTING EQUIP	IVIEN I:	Space	Adjac	ent	T			Space	Adjacent
Dry Powder Extinguishe	r(c)	Space				inguisher	·(c)	Space	Aujacent
H ₂ O Extinguisher(s)	1(3)				Foam	iliyuisilei	(3)	H	l H
1120 Extinguisher(s)		-	"		Extingui	char(s)			, –
Fixed H ₂ O (Deluge, Sprinklers,							e)		
etc.)				Fire Water Hose(s)					
Fixed Halon			Fixed CO ₂						
•	Other:								
100000	Comments / Recommendations								
COMMUNICATIONS, E	TC.:								
Telephone		CCTV PA Speaker					\boxtimes		
Fire Alarm Button		Bilge Alar				Emerge	ency L	₋ighting	\boxtimes
GA Alarm Button		General A	Alarm			Other:			
Comments / Recommendations Fire alarm button outside space fwd, Telephone and sound powered telephone outside space aft.									
Fire alarm button outside spac	e fwd, Telepho	ne and soun	d powere	d tele	phone outsic	le space af	t.		
ESCAPE ROUTES:								_	
One door fwd to riser deck.		_							
and all the field all the fiel									
COMPARTMENT: CO	2 Bottle Ro	om							
FIRE:	2 Doule No.	-							
Ignition Sources / Fuel				Pr	eventions	: (Note F	X ear	uinment)	
igmuon cources / r dei				+••	CVCIILIOII	I (NOTO L	n cyt	iipiricitt)	
Consequences				Mi	tigations				
DEVICIONAL O							_		
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Risk Rank:	Risk Category:		ALARP?:	Yes / No		
EXPLOSION:				A 100		
Ignition Sources / Fu	iel	Preventions (No	ote EX equipn	nent)		
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
FLOOD:						
Hazards		Preventions				
		Drains.				
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
OTHER: Pressure, as	sphyxiation					
Hazards		Preventions		· ·		
Stored pressure in bottles Leaking valves, piping		Preventive maintenance and inspections Careful handling of cylinders testing of atmosphere, use of buddy system				
Consequences		Mitigations				
Possibility of injury to personnel		Availability of medical treatment including medivac				
Risk 9 Rank:	Risk Category: Low		ALARP?:	Yes		
RECOMMENDATION	S:					

COMPARTMENT NAME:	Crane and pedestal, port
LOCATION:	Port main deck, amidships

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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AP	r	NU	\mathbf{L}	ш

DIMENSIONS: 3.4m x	3.3m				MANNING: In	termit	tent	
POWER / FLUID / CONT	ROL LINES	:						
Power cables, hydraulic h	oses, diese	l fuel piping,	batt	tery o	cabling	•		
COLUMN CONTRACT								
PLC controller								
Slewing brake								
HVAC / DUCTING:								
Package A/C in cab, ped	estal ventilat	tion when en	aine	runi	ning			
PASSIVE FIRE PROTEC				_				
Deck: A Forward Bulkhead: A					ckhead:	A	•	
Forward Bulkhead: A Port Bulkhead: A					Bulkhead: rboard	A-60 A	J	
Fort Buikilead.	•				khead:	^		
Comments / Recommen	ndations				Miloud.			
Diesel fuel tank on top of engine		d on battery box	whi	le refu	ieling crane.			
FIRE/GAS DETECTION:								
	Space	Duct					Space	Duct
Constant Manning				Hyc	rocarbon Detecto	or(s)		
Flame Detector(s)				H₂S Detector(s)				
Heat Detector(s)				Other:_			\boxtimes	
Smoke Detector(s)								
Comments / Recommen				al.				
Smoke from this space w	ould be visit	oie to men or	ı ae	CK.				
FIRE FIGHTING EQUIPM	MENT:							
		Space Ac	ljac	ent			Space	Adjacent
Dry Powder Extinguisher	(s)				CO ₂ Extinguishe	er(s)		
H ₂ O Extinguisher(s)					Foam			
Fixed II O (Delves Costs	Lia				Extinguisher(s)	(.)		
Fixed H₂O (Deluge, Sprin etc.)	kiers,				Fire Water Hose	e(s)		
Fixed Halon					Fixed CO ₂			
Other:		H	П		Tixed CO2			
Comments / Recommen	dations							
COMMUNICATIONS, ET								
Telephone		CCTV						
Fire Alarm Button GA Alarm Button		Bilge Alarm					Lighting	⊠
Comments / Recommen		General Alan	n		Other	VHF	radio	
Operator cannot hear page								
	,00							
ESCAPE ROUTES:								
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APPENDIX III

One escape ladder on outside of crane, one escape ladder inside of crane.

<u></u>							
COMPARTMENT:	Crane and pedestal Port						
FIRE:							
Ignition Sources / F	uel	Preventions (Note EX equipment)					
Electric wiring/shorts		Preventive maintena	ince and inspect	tions			
Diesel, hydraulic/lubri		Housekeeping					
Flammable aerosols i	n pedestal						
Consequences		Mitigations					
	to equipment/loss of use of	Firefighting capability	ios				
crane	to equipment/loss of use of	Availability of medic	al treatment incli	udina			
Possibility of injury to	personnel	medivac		g			
		Availability/use of of	her crane				
		Ability to effect repa					
Risk 9	Risk Category: Low	Al	ARP?: Yes				
Rank:							
EXPLOSION:		Dunner of the state of the stat	FV (
Ignition Sources / F	ueı	Preventions (Note	<u> Ex equipment)</u>				
Consequences		Mitigations					
Risk	Risk Category:	A	LARP?: Yes/	No			
Rank:							
FLOOD: Hazards		Preventions					
nazarus		Drains.					
		Diams.					
Consequences		Mitigations					
Risk	Risk Category:	Δ	ARP?: Yes/	No			
Rank:	Misk Gategory.		-AIG 1007	,,,			
OTHER:							
Hazards		Preventions					
	(major hazard tables)						
Other considerations							
Consequences	•	Mitigations					
` ` `							
Risk	Risk Category:	A	ARP?: Yes /	No			
Rank:							
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RECOMMENDATIONS:

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Consider the installati	on of an approv	ed flamm	nables s	toraç	ge locker for the po	rt crai	ne pedesta	il.
							<u></u>	
COMPARTMENT NAME:	Deck offi	ce/Stbd E	lectrica	l Spa	ice			
LOCATION:	2 nd Deck	Accomm	odation	s Stb	d Side			
DIMENSIONS: 7m	X 5m				MANNING:			
POWER / FLUID / CO		5:				_		
120V Outlet and Lighting C 208/120V Power Panel (23 Panel RP-008 (248008) 480V AC Power Dist. Pane Doppler Radar Power Supp	6003) I (236201)			#9 & : Fire 8	ork Cabling #10 Welding Outlets (W & Gas Junction Box (FG 480V Power Panel #1 (I	J B02)		
CONTROL SYSTEMS	S:							
Stbd Fwd 120/280V Dist. F VSAT Equipment Rack (VS HiTec Drilling Control Netw	Panel (PM#248002 SAT-003)	•						
HVAC / DUCTING:								
HVAC Ventilation Ducts								
PASSIVE FIRE PRO								
Deck:	A-0				khead:	A-60		
Forward Bulkhead: Port Bulkhead:	A-60 A-60					A-60 A-60		
POR Buikneau.	A-60				khead:	A-00		
Comments / Recomments	mendations							
FIRE/GAS DETECTION	ON:	e Sala care o 2771 e este as factiones						
FIRE/GAS DETECTION	Space	Di	ıct			$\overline{}$	Space	Duct
Constant Manning			ici.	Hvo	rocarbon Detector	(s)		
Flame Detector(s)		г	۱ ۱		Detector(s)	(")	Ħ	
Heat Detector(s)			j		er:	_		
Smoke Detector(s)]			_		
Comments / Recomments / Recomme								
FIRE FIGHTING EQU	JIPMENT:							
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguis	her(s)	<u> </u>		l	CO ₂ Extinguisher	(s)	닏	
H ₂ O Extinguisher(s)		LJ	l L	J	Foam			
Fixed H ₂ O (Deluge, Sprinklers, etc.)				Extinguisher(s) Fire Water Hose		s)		
Fixed Halon					Fixed CO ₂			
Other: []				
								•
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Comments / Recom	mendations							
COMMUNICATIONS								
Telephone	\boxtimes	CCTV		PA Spe				
Fire Alarm Button		Bilge Alarm	Emergency Lighting					
GA Alarm Button		General Alarm	Other:					
Comments / Recom	mendations							
Telephone #323								
ESCAPE ROUTES:								
Exit port through only door into Stbd Transformer Room, then out WTD to Fwd Lifeboat Deck								
COMPARTMENT:	Deck Office/St	bd Electrical Spac	е					
FIRE:								
Ignition Sources / Fr	uel		Prevention	s (Note E	X equipment)			
Electrical winng/pane					ce and inspect	ions		
Class A materials in o			Housekeepi					
Consequences			Mitigations					
Possibility of damage	to equipment/	compartment	Firefighting		<u>s</u>			
possibility of injury to		oomparanone			treatment inclu	ıdina		
possibility of figury to	medivac			troutinont more	. 9			
Risk 9	Risk Catego	ory: Low		ALA	ARP?: Yes			
Rank:		,						
EXPLOSION:								
Ignition Sources / Fr					X equipment)			
iginasi, eearees / 1			1101011111	- (
Consequences			Mitigations	<u> </u>				
		-						
Risk	Risk Catego	ory:		AL	ARP?: Yes/	N0		
Rank:								
FLOOD:								
Hazards			Prevention	S				
			Drains.					
Consequences			Mitigations	3				
Risk	Risk Categ	ory:		AL	ARP?: Yes/	No		
Rank:		-						
	1							
	_							
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Hazards	Electrical s	·	Preventions				
Contact with live energy sources			Preventive maintenance and inspections PPE, PTW, energy isolation				
Conseque	ences		Mitigations				
Possibility Possibility		personnel	Availability of medical treatment including medivac				
Risk Rank:	15	Risk Category: Medium	n ALARP?: Yes				
RECOMM	ENDATIO	NS:					

COMPARTMENT	Derrick	100 10 10 10 10 10 10 10 10 10 10 10 10							
NAME:									
LOCATION:	Above mair								
DIMENSIONS: 242ft x 4	48ft x 48ft bas	se	MANNING: As r	equired					
POWER / FLUID / CONTI	ROL LINES:								
Hydraulic lines running up the stbd fwd side of the derrick, also running to the stbd aft. Feeds the fwd and aft PRS Electrical tray at the 100ft level stbd fwd									
CONTROL SYSTEMS:									
35ft level fwd derrick controls for									
70ft level fwd derrick controls for									
100ft level fwd and aft derrick co 140ft level aft control monitor, hy									
145K level all control mornior, my	diadio dia di 1	seder to ma una	ait i i i i						
HVAC / DUCTING:			41 4 40 40 40 40 40 40 40 40 40 40 40 40 4						
Open air									
PASSIVE FIRE PROTEC	TION:				A STANSON COMMENT OF THE STANSON OF				
Deck:			Deckhead:						
Forward Bulkhead:			Aft Bulkhead:						
Port Bulkhead:			Starboard						
			Bulkhead:						
Comments / Recommen	dations								
Detection system in derrick									
FIRE/GAS DETECTION:									
TINE GAS BETECTION.	Space	Duct	T	Space	Duct				
Constant Manning	Space	Duci	Hydrocarbon Detector(s						
Flame Detector(s)			H ₂ S Detector(s)	"│					
Heat Detector(s)		H	- ` ` `	H					
Smoke Detector(s)	\vdash	H	Other:	- 🗀					
Smoke Detector(s)									

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Comments / Recomm	nendations		_					
FIRE FIGHTING EQUIPMENT:								
		Space	Adjacen	t		Space	Adjacent	
Dry Powder Extinguis	her(s)		\boxtimes		nguisher(s)			
H ₂ O Extinguisher(s)	• •			Foam	. ,			
				Extinguis		_	_	
Fixed H ₂ O (Deluge, S	prinklers,			Fire Wat	er Hose(s)			
etc.)								
Fixed Halon				Fixed Co	D_2			
Other: Comments / Recomm	nondations							
Dry powder located or		a hottom a	f dordek n	oar the port	fud wall Do	rrick cupped	stauctura	
protected by moon po	ol deluge and	shakar ha	nee delnae	ear the port	iwu waii. De	mck suppon	Structure	
COMMUNICATIONS,		SHAKEI HO	use delage	·	 _	···		
Telephone		CCTV			DA Casakas			
Fire Alarm Button		Bilge Alar		\boxtimes	PA Speaker Emergency	iahtina	\boxtimes	
GA Alarm Button	님 !	General A		H	Other:	Lighting	片ㅣ	
Comments / Recomm	mendations	General	Maiiii		Other.			
Phone: Driller's talk ba		fwd derricl	c, crown le	vel. Driller's	talk back port	fwd 100ft le	evel	
ESCAPE ROUTES:								
Derrick ladders only								
COMPARTMENT:	Derrick (equipr	nent)						
FIRE:	ocinick (equipi	nem,						
Ignition Sources / Fu				reventions	(Note EX equ	uinment)		
Electrical wiring/shorts					naintenance a		ne —	
Liconical willing/shorts	s (top drive)		'	icventive ii	ialilichance a	na mapecao	13	
Consequences				litigations				
Damage to equipment	<u> </u>				apabilities, E	SD's		
Damago to oquipinon	•			bility to effe				
				,			ı	
Risk 13	Risk Catego	ry: Med	ium		ALARP1	: Yes		
Rank:								
EXPLOSION:		10.000						
Ignition Sources / Fu	iel		F	reventions	(Note EX eq	uipment)		
Electrical wiring/shorts		_		Preventive maintenance and inspections				
Gas from the well	(procedu r es - g			
Metal to metal contact	t (sparks)					,		
Consequences			1	litigations			_	
Damage to equipment				Firefighting capabilities, ESD's				
J			l A	Ability to effect repairs				
Risk 15	Risk Catego	ory: Med	ium		ALARP	?: Yes		
Rank:								
	FLOOD:							
Hazards			F	Preventions	<u> </u>			
DEVIOLONIALO:	04					DAGE	OF	

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		Drains.						
Consequences		Mitigations						
Risk Rank:	Risk Category:	ALARP?: Yes / No						
OTHER:								
Hazards		Preventions						
Dropped/fallen ob	jects (major hazards tables)							
Consequences		Mitigations						
Risk Rank:	Risk Category:	ALARP?: Yes / No						
RECOMMENDAT	IONS:							

COMPARTMENT [Oraw-works House Top		
	On top of draw work		
DIMENSIONS: 23m X 10n		MANNING:	Manned as necessary
POWER / FLUID / CONTRO	L LINES:		
120v, hydraulic lines for Varco mani	fold, high pressure mud, rig air.		
CONTROL SYSTEMS:			
Manual controls for draw work. Mot	or drive rooms located fwd and aft o	n top of draw works	s house stbd side.
Controls for Palfinger basket, TDS p	arking system		
HVAC / DUCTING:			
Open air			
PASSIVE FIRE PROTECTION	DN:		
Deck: B-30	De	ckhead:	
Forward Bulkhead:	Aft	Bulkhead:	
Port Bulkhead:	Sta	rboard	
	Bu	khead:	

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Comments / Bassamus											
Comments / Recomm Hatch square located on stbd		of house ton									
l man equal of out of o	olde middinge	or riodoc top									
FIRE/GAS DETECTION	N:										
	Space	Du	ıct	_				Space		Duct	
Constant Manning				Hve	drocarbon [Detector((s)				
Flame Detector(s)		Г	7 i		Detector(s		'	Ħ		Ħ	
Heat Detector(s)		Ī	i l		ner:			Ħ		Ħ	
Smoke Detector(s)		Ī	ī						_		
Comments / Recomm	endations										
FIRE FIGHTING EQUI	DMENT.										
TINE HOMING EQUI	- IVICIO I .	Space	Adjac	ent	_			Space	Δ	djacent	
Dry Powder Extinguishe	er(s)			CIII	CO ₂ Extir	nauisher/	(6)		^		
H ₂ O Extinguisher(s)	3,(0)				Foam	iguisiici	(3)	H		H	
					Extinguis	her(s)					
Fixed H₂O (Deluge, Spi	rinklers.	· 			Fire Wate		(2				
etc.)	•						'			_	
Fixed Halon					Fixed CO)2					
Other:											
Comments / Recomme	endations										
CO2 de-gassing vent											
COMMUNICATIONS, E	TC :										
Telephone		CCTV				DA Coo	akar				
Fire Alarm Button			m		片ㅣ	PA Spea		iahlina		Ħ	
Fire Alarm Button					⊠ I	Other:	iicy L	ignung		H	
Comments / Recomme		Ocholal /	-			Other.	_				
Telephone behind drille											
FOOADE DOUTEO											
ESCAPE ROUTES: Take the stairs stbd fwo	l hausa taa										
Take the Stall's Stou Iwo	i ilouse top										
COMPARTMENT: Dr	awworks Ho	use Top									
FIRE:											
Ignition Sources / Fue	el			Pr	Preventions (Note EX equipment)						
Electrical wiring shorts				Pr	eventive m	aintenan	ce an	d inspect	ons		
Consequences				RA:	itinations						
Possibility of damage to	- Aquinmant	_		Mitigations Firefighting capabilities							
Possibility of injury to pe				Availability of medical treatment including							
Possibility of injury to personner			medivac								
Risk 9 I	Dick Catego	nu lou		""	Cuivao	A1 A	RP?	. Vac			
Rank:	Risk Catego	ry: Low				ALA	ARP!	: Yes			
EXPLOSION:											
Ignition Sources / Fuel					Preventions (Note EX equipment)						
Electrical wiring shorts				Preventive maintenance and inspections							
Gas from the well				Eex rated equipment							
				Well control procedures - gas handling							
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Consequences		Mitigations				
Possibility of damage to equipment Possibility of injury to personnel		Firefighting capabilities Availability of medical treatment including medivac				
		Micuivac				
Risk 9	Risk Category: Low		ALARP?:	Yes		
Rank:						
FLOOD: Hazards		Preventions				
nazarus		Drains.				
		Dianis.				
Consequences		Mitigations				
Consequences		Watigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank:						
OTHER: Pressure	N= XX					
Hazards		Preventions				
Contact with live ener		PPE, PTW, energy isolation				
Rupture/leak in piping						
Consequences		Mitigations				
Possibility of injury to	personnel	Availability of medical treatment including				
Possibility of fatality		medivac				
Risk 6 Rank:	Risk Category: Low		ALARP?:	Yes		
RECOMMENDATION	S:					

COMPARTMENT NAME:	Driller's Work Station	
MANIE.		
LOCATION:	Stbd Aft rig floor	
DIMENSIONS: 25 X 18		MANNING: 2 usually
POWER / FLUID / CONTR	OL LINES:	
120v, air lines.		
CONTROL SYSTEMS:		
Cameron controls for BOP, Cybel lights, fire and gas matrix, MRU p		chine shut down located on stbd bulkhead above ESD

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APPENDIX	11
APPENDIX	ш

HVAC / DUCTING:				-	· · ·				
Purge air system					_				
PASSIVE FIRE PROT	ECTION:								
Deck:					ckhead:				
Forward Bulkhead:			l .	Bulkhead:					
Port Bulkhead:					rboard				
				Bul	khead:				
Comments / Recomm	nendations								
FIRE/GAS DETECTION									
Constant Manaina	Space	Du	ct			D-44/	_ \	Space	Duct
Constant Manning		-	, ,		drocarbon		S)	\boxtimes	
Flame Detector(s)		-	-		Detector			Ħ	\vdash
Heat Detector(s) Smoke Detector(s)			1		iei. <u>Coilib</u>	uslibie			
Comments / Recomm	nendations								
The simrad SVC can acces		system to mo	nitor rig e	emerge	encies				
FIRE FIGHTING EQU	IPMENT:								_
		Space	Adjac	ent				Space	Adjacent
Dry Powder Extinguis	ner(s)	│	l ⊨	ļ		nguisher((S)		
H ₂ O Extinguisher(s)		Ц		I	Foam	h - = (=)			⊔
Fixed H.O. (Daluga, S.	nrinklara	Extinguisher(s) Fire Water Hose(s)		٠,					
Fixed H ₂ O (Deluge, Si etc.)	prinklers,				File vval	ei nose(s	>)		
Fixed Halon					Fixed CO	٦.			
Other:		H		1	1 IXCU OO2				
Comments / Recomm	nendations								
Co2 bottle located on port b									
COMMUNICATIONS,	ETC.:							_	
Telephone		CCTV			\boxtimes	PA Spe	aker		\boxtimes
Fire Alarm Button		Bilge Alar					ncy !	cy Lighting	
GA Alarm Button		General A	Alarm		☑ Other:				
Comments / Recomm									
There is a gas fire pollution	pan alarm, a PA	system, and I	DP alarm	lights	located nea	r the Camer	оп со	ntrois	
ESCAPE ROUTES:									
Exit through the front door of	onto the ria floor u	sing the aft s	tairwell o	r the f	wd stairwell f	or escape.	or exit	through the b	ack door going
through the heavy tool store	e room, through th	e fwd hatch.							
COMPARTMENT:	Driller's Work S	Station							
FIRE:	Jimoro Work	, tution							
Ignition Sources / Fu	iel		_	Pr	eventions	(Note E	X ea	uipment)	
Electric wiring/shorts			Preventions (Note EX equipment) Preventive maintenance and inspections						
				Eex equipment					
Housekeeping									
Consequences Mitigations									
Possibility of damage to equipment/compartment				refighting (
Shut down of drilling				,	f medical	trea	tment inclu	ding	
Possibility of injury to	Possibility of injury to personnel medivac								
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Risk 15 Rank:	Risk Category: Medium	ALARP?: Yes				
EXPLOSION:						
Ignition Sources / Fu	iel	Preventions (Note EX equipment)				
Electric wiring/shorts		Preventive maintenance and inspections				
Gas from the well		Eex equipment				
		Purged space				
Consequences		Mitigations				
	to equipment/compartment	Firefighting capabilities				
Shut down of drilling		Availability of medical treatment including				
Possibility of injury to	personnel	medivac				
Risk 15	Risk Category: Medium	ALARP?: Yes				
Rank:						
FLOOD:		1 =				
Hazards		Preventions				
		Drains.				
Consequences	<u> </u>	Mitigations				
Consequences		willigations				
	•					
Risk	Biok Cotogony	ALARP?: Yes / No				
Rank:	Risk Category:	ALARPI. 165/NO				
OTHER:						
Hazards		Preventions				
	s (major hazards tables)	Fieventions				
Dropped/fallen object	s (major nazaros tables)					
Concomionos		Mitigations				
Consequences		Mitigations				
Risk	Pick Category	ALARP?: Yes / No				
Risk Rank:	Risk Category:	ALARPT: TESTINO				
RECOMMENDATION	13:					
		10 10 10 10 10 10 10 10 10 10 10 10 10 1				

COMPARTMENT	Driller's Store Room	
NAME:		
LOCATION:	Stbd side Rig Floor	

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DIMENSIONS: 11m x 12	2m				MANNIN	IG: Inter	mitte	ent	
POWER / FLUID / CONTR		S:							
120v, 480v, rig air, hydraulic lines	•								
CONTROL SYSTEMS:									
Main control system unit, cathead Radio comms box, PA/GA, Schlu			air						
Radio commis box, PA/GA, Schid	mberger jun	Clion box							
INVAC (BUCTING									
HVAC / DUCTING:									
1 duct to stbd, open to port	Į.								
PASSIVE FIRE PROTECT	ION:								
Deck:				Dec	khead:				
Forward Bulkhead:				Aft i	Bulkhead:				
Port Bulkhead:					rboard				
0	1_41			Bull	chead:				
Comments / Recommend	lations								
FIRE CAS PETEOTION								-	
FIRE/GAS DETECTION:	Caaaa		nt I					Space	Duct
Constant Manning	Space	Du	ict	Hyd	rocarbon l	Detector/s	۱,	Space	
Flame Detector(s)	H		n l		Detector(۱ ۲	H	
Heat Detector(s)	H	⊢⊢⊨	าี		er:			Ħ	
Smoke Detector(s)			j l	•			-		
Comments / Recommend	dations								
FIRE FIGHTING EQUIPM	ENIT.								
FIRE FIGHTING EQUIPM	EIN I :	Space	Adjac	ent				Space	Adjacent
Dry Powder Extinguisher(s	:)				CO ₂ Exti	nguisher(s)		
H ₂ O Extinguisher(s)	''	ŀН		i	Foam	nguionoi (٠,	l Н	
1120 Extragalation (a)			_		Extinguis	sher(s)			
Fixed H ₂ O (Deluge, Sprink	lers,					er Hose(s	s)		
etc.)								_	
Fixed Halon			_		Fixed CO	O_2			
Other:	 -								
Comments / Recommend	ations								
COMMUNICATIONS, ETC	<u> </u>							_	
Telephone		CCTV				PA Spe	aker		\boxtimes
Fire Alarm Button		Bilge Ala	rm			Emerge			\boxtimes
GA Alarm Button		General A				Other: _			
Comments / Recommend	dations								
FOCADE DOUTES:									
ESCAPE ROUTES:									_
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Forward door to stairs	s to main deck						
COMPARTMENT:	Driller's Store Room				THE PARTY OF THE P		
FIRE:							
Ignition Sources / F	uel	Preventions (Note EX equipment)					
Electrical wiring/short		Preventive mainte			ions		
Class A materials		Eex equipment		•			
Flammable aerosols		Housekeeping					
Consequences		Mitigations					
Possibility of damage	to equipment/compartment	Firefighting capab					
Possibility of injury to	personnel	Availability of med	fical	treatment			
Risk 9	Risk Category: Low		ALA	ARP?: Yes			
Rank:							
EXPLOSION:							
Ignition Sources / F		Preventions (Not					
Electrical wiring/short	s	Preventive mainte	enan	ce and inspect	tions		
Gas from well		Eex equipment					
Flammable aerosols		Well control proce	dur	es - gas handli	ng		
Consequences		Mitigations					
	to equipment/compartment	Firefighting capab	ilitie	S			
Possibility of injury to	personnel	Availability of med	lical	treatment			
Risk 9	Risk Category: Low		AL	ARP?: Yes			
Rank:							
FLOOD:							
Hazards		Preventions					
		Drains.					
Consequences		Mitigations					
Risk	Risk Category:		ALA	ARP7: Yes /	No		
Rank:							
OTHER:							
Hazards		Preventions					
Contact with live ene	rgy sources	PPE, PTW, energy isolation					
		B.4*** - 1**					
Consequences	Mitigations	d: •	400 min = 4 ! 4				
Possibility of injury to Possibility of fatality	personnei	Availability of med medivac	ncai	treatment inci	uding		
Risk 15	Risk Category: Medium		ΛI /	ARP?: Yes			
Rank:	Nisk Category. Wedium		~L/	aner. Tes			
RECOMMENDATIONS:							
			_				
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Consider the installation of an approved flammables storage locker for the Driller's Store Room.

APP	END	IX III

COMPARTMENT Driller's Store Top NAME: LOCATION: Above drill store, stbd side, 49.4m above baseline **DIMENSIONS:** Approx. 11m x 12m MANNING: As required **POWER / FLUID / CONTROL LINES:** 120 v, 480v.for wireline logging unit. Rig air, pot water, diesel, chemical hoses **CONTROL SYSTEMS:** No controls for rig systems. Wireline logging unit present, controls inside. **HVAC / DUCTING:** The space is located outside, therefore we must be conscious of our heading and wind relation if a fire should arise. **PASSIVE FIRE PROTECTION:** Deckhead: Deck: A-0 Forward Bulkhead: Aft Bulkhead: Port Bulkhead: Starboard Bulkhead: Comments / Recommendations FIRE/GAS DETECTION: Duct **Space** Duct Space **Constant Manning** Hydrocarbon Detector(s) H₂S Detector(s) Flame Detector(s) Heat Detector(s) Other: Smoke Detector(s) Comments / Recommendations FIRE FIGHTING EQUIPMENT: Adjacent Space **Adjacent** Space Dry Powder Extinguisher(s) CO₂ Extinguisher(s) H₂O Extinguisher(s) Foam Extinguisher(s) Fixed H₂O (Deluge, Sprinklers, Fire Water Hose(s) etc.) Fixed Halon Fixed CO₂ Other: Comments / Recommendations Recommend adding a dry powder extinguisher to space.

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APPENDIX I	П
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COMMUNICATION	S, ETC. :					
Telephone		CCTV			PA Speaker	
Fire Alarm Button		Bilge Alarm]	Emergency Lighting	
GA Alarm Button		General Alarm			Other:	
Comments / Reco	mmendations					
Schlumberger unit is fitte Sperry Sun unit has purg	ed with smoke detec ge air, combustible g	or, gas alarm, purge a as detector, dry chem	ir, dry chem e ext, PA and t	ext., P/ elepho	A and telephone one	
ESCAPE ROUTES			- California			
Aft stairs to stbd ma	ain deck, stbd sid	de walkway to crar	ne pedesta	l and	down vertical ladder.	
COMPARTMENT:	Driller's Store	Top / including 3rd	party units	S		
FIRE:						
Ignition Sources /					(Note EX equipment)	
Electric wiring/short	S				aintenance and inspections	
Class A materials			Eex equ	ipme	nt	
Consequences			Mitigatio	200		
Damage to equipme	ant/3rd narty uni				apabilities	
Damage to equipme	choold party uni	15			medical treatment including	ļ
			medivac		medical treatment including	
Risk 9	Risk Catego	ory: Low	111041144		ALARP?: Yes	-
Rank:	Kisk Catego	ny. Low			ALARFI. 165	
EXPLOSION:						\dashv
Ignition Sources /	Fuel		Prevent	ions	(Note EX equipment)	\dashv
Electric wiring/shorts Preventive maintenance and inspections				\dashv		
Gas from well Eex equipment						
Calibration gas cylin	Calibration gas cylinders Well control procedures - gas handling					
Consequences Mitigations			\neg			
Damage to equipment/3rd party units Firefighting capabilities			apabilities			
			Availability of medical treatment including			
			medivac		•	
Risk 9	Bick Catons				ALADDO: Vos	
Rank:	Risk Catego	ory: Low			ALARP?: Yes	
FLOOD:	<u> </u>			_		\dashv
Hazards			Preventi	ione		\dashv
			Lievelli	10113		\dashv
Consequences			Mitigatio	ons		
Diek	Dial Cat					
Risk Rank:	Risk Catego	ory:			ALARP?: Yes / No	
OTHER: Pressure						
Hazards			Decrees			
nazaius			Preventi	ons		

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ΑP	PE	ND	ΙX	Ш

Contact with live ene Stored pressure/calib	rgy sources oration gas cylinders /3rd party	PPE, PTW, energy isolation Preventive maintenance and inspections Careful handling of cylinders			
Consequences		Mitigations			
Possibility of injury to	Availability of medical treatment including medivac				
Risk 6 Rank:	Risk Category: Low	AL	ARP?:	Yes	
RECOMMENDATION	NS:				

COMPARTMENT	Dry Store			
NAME:	-0d			
LOCATION:		nmodation, outboard of galley		
	5m x 5m	MANNING: 0-2		
POWER / FLUID / CONTR	ROL LINES:			
120v, 480v, rig air, refrigerant				
CONTROL OVETENS				
CONTROL SYSTEMS: Switchboard for reefer plant				
electrical panel for galley/laundry	,			
oloculous polici ici gelio, licaliai,	•			
HVAC / DUCTING:				
Fire zone 10				
			<u></u>	
PASSIVE FIRE PROTECT	TION:			
Deck: A-	•		A-0	
Forward Bulkhead: A-	-		A-0	
Port Bulkhead: A-	-0		A-0	
	dedicas	Bulkhead:		
Comments / Recommend	dations			
FIRE CAS DETECTION.				
FIRE/GAS DETECTION:	Space Duc	+	Space	Duct
Constant Manning	Space Duc	Hydrocarbon Detector(
Flame Detector(s)		H ₂ S Detector(s)	"	
Heat Detector(s)		Other:		
Smoke Detector(s)			- -	
Comments / Recommend	dations			
FIRE FIGHTING EQUIPM				Adiana
Dry Powder Extinguisher(s		Adjacent CO ₂ Extinguisher	s) Space	Adjacent
			DAGE	OF
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Transocean	MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON				APPENDIX III			
,	DLL	FVAILI	HORIZON					
H ₂ O Extinguisher(s)			Foam Extinguis	her(s)				
Fixed H ₂ O (Deluge, Sprinkler	s, 🛛			er Hose(s)				
etc.) Fixed Halon			Fixed CC)2				
Other: Comments / Recommendat	ions							
Commence / Necommence	.0113							
COMMUNICATIONS, ETC. :								
Telephone	CCTV			PA Speal				
Fire Alarm Button	Bilge Alai			Other:	cy Lighting	×		
GA Alarm Button Comments / Recommendat	General A	Naiiii		Other.				
Commonator Nocommonator								
ESCAPE ROUTES: Out stbd door then forward through o								
COMPARTMENT: Dry Stor	re							
FIRE:			D	(Nata EV				
Ignition Sources / Fuel Electrical wiring/shorts			Preventions			tions		
Class a materials			Preventive maintenance and inspections Housekeeping					
Glass a materials			Подокооры	9				
Consequences			Mitigations					
Damage to equipment/compa	artment		Firefighting c Availability of medivac		reatment incl	uding		
	Category: Low			ALAF	RP?: Yes			
Rank:								
EXPLOSION: Ignition Sources / Fuel			Preventions	(Note EX	equinment)			
ightion sources / ruei			Tevendons	(Note EX	equipment			
Consequences			Mitigations					
Risk Risk (Category:			ALAI	RP7: Yes/	No		
Rank:								
FLOOD: Hazards			Duamanti ana					
nazarus			Preventions Drains.					
Consequences			Mitigations					
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Risk	Risk Categor	··		ALAR	P?: Yes/	No.
Rank:	Kisk Category	y.		ALAR	er: tes/	NO
OTHER:					-	
Hazards		_	Preventions			
Consequences			Mitigations			
				,		
Risk Rank:	Risk Category	/ :		ALAR	P?:	
RECOMMENDATI	ONS:					
COMPARTMENT	Electrical	Equipment Ro	om			
NAME: LOCATION:	Port Fwd	second deck		_		
	Approx. 18x35x10	second deck	MANNING:	As rec	uired	
POWER / FLUID /		;				
480v distribution, 120v,	208v					
Control air Seawater line to foam p	amp					
,	,					
CONTROL SYSTE	MS:					
UPS for PA/GA						
Telephone Rack						
Nav & Comm panels						
10/40/511071110						
HVAC / DUCTING High ventilation for coo						
Forced supply and exha	aust					
PASSIVE FIRE P	ROTECTION:					
Deck:	A-0		Deckhead:		-60	
Forward Bulkhead			Aft Bulkhead:		-30 -0	
Port Bulkhead:	A-0		Starboard Bulkhead:	A	-0	
Comments / Reco	mmendations	_				
FIRE/GAS DETEC	TION:					
	Space	Duct			Space	Duct
Constant Manning			Hydrocarbon Det	ector(s)		
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9	MAJOR ACCIDENT HAZARD RISK ASSESSMENT					APPENDIX III			
Transoce	ORIZON		Щ,						
Flame Detector(s) Heat Detector(s)		H ₂ S Detector(s) Other:					_		
Smoke Detector(s) Comments / Recomme	ndations					-			
FIRE FIGHTING EQUIP	MENT:								
Dry Powder Extinguishe H ₂ O Extinguisher(s)	,,	Space	Adjace	ent	Foam Extinguis	nguisher(sher(s) er Hose(s		Space	Adjacent
Fixed H₂O (Deluge, Spri etc.) Fixed Halon	nkiers,				Fixed CO	•	>)		
Other: Fire Axe Comments / Recomme	ndations								
COMMUNICATIONS, E Telephone Fire Alarm Button GA Alarm Button	TC. :	CCTV Bilge Alar General A		PA Speaker Emergency Lighting Other:Toxic/Combustible gas alarm buttons.				le 🗌	
Comments / Recomme						guo aidi			
ESCAPE ROUTES:						<u>-</u>			
2 doors on aft bulkhead									
	ctrical Equi	pment Roc	om						
FIRE: Ignition Sources / Fuel				T D-	oventions	/Noto E	V 00	uinmont)	
Electrical wiring/shorts				Preventions (Note EX equipment) Preventive maintenance and inspections					
Consequences				Mi	tigations				
Possibility of damage to	equipment	compartmo	ent	Firefighting capabilities Availability of medical treatment including medivac					
Rank:	Risk Catego	ory: Low				ALA	ARP?	?: Yes	
EXPLOSION:						- /NI=+= F	V	······································	
Ignition Sources / Fue				Pr	eventions	(Note E	x eq	<u>иіртепт)</u>	
Consequences				Mi	tigations		_		
DEMOIS									
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Risk	Risk Category:		ALARP?:	Yes / No		
Rank:						
FLOOD:						
Hazards		Preventions				
		Drains.				
Consequences		Mitigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank:	<u> </u>					
OTHER: Electrical si	hock					
Hazards		Preventions				
Contact with live ene	rgy sources	Preventive maintenance and inspections PPE, PTW, energy isolation				
Consequences		Mitigations				
Possibility of injury to Possibility of fatality	Availability of medical treatment including medivac availability of high voltage PPE					
Risk 15 Rank:	Risk Category: Medium		ALARP?:	Yes		
RECOMMENDATION	NS:			,		
Consider providing hi	gh voltage PPE for this space. A ectrical shock situation.	Also consider the pla	cement of a	sign detailing the		

COMPARTMENT	Electrician's shop								
NAME:									
LOCATION: 3 rd deck, portside, amidships									
DIMENSIONS: App	orox. 20x22x11 feet	MANNING	: As	required					
POWER / FLUID / CO	ONTROL LINES:								
120v, 208v, 480v, 12vdc, 2	4vdc, 240v								
Compressed air lines									
Pot water, drill water, fire w	rater								
CONTROL SYSTEM	S:								
UPS 135A		Fire main isolation v	alve						
Drill Equipment Control cal	pinet 101B001& 101B450								
Comms & Power distribution	on panel A								
Panel LP-053 (268053)									
Test panel for 75 kW moto	r (248224)								
HVAC / DUCTING:									
Air conditioning package #	9,								
Controls for supply fan #8	& exhaust fan #2 located in passagev	vay.							
PASSIVE FIRE PROTECTION:									
Deck:	A-0	Deckhead:		A-0					
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APPENDIX	11
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Forward Bulkhead: A-0 Port Bulkhead: A-0			Sta	Bulkhead: rboard khead:	A-0 A-0				
Comments / Recommendations Aft bulkhead of space is the forward bulkhead of the fuel oil settling and service tanks.									
FIRE/GAS DETECTION:									
Space	Du	ict				Space	Duct		
Constant Manning					Detector(s)				
Flame Detector(s)]	H_2S	Detector((s)				
Heat Detector(s)]	Oth	er:					
Smoke Detector(s)									
Comments / Recommendations ASH 172901			12111						
FIRE FIGHTING EQUIPMENT:									
	Space	Adjac	ent		•	Space	Adjacent		
Dry Powder Extinguisher(s)		l □			nguisher(s)				
H ₂ O Extinguisher(s)		⊔		Foam		⊔			
Fixed H ₂ O (Deluge, Sprinklers, etc.)				Extinguis Fire Wat	sher(s) er Hose(s)				
Fixed Halon				Fixed CC) ₂	П			
Other:	ΙĦ	Ιп		Nou oc	22	"			
Comments / Recommendations Fire main isolation valve in space									
COMMUNICATIONS, ETC. :									
Telephone 🖂	CCTV			닏	PA Speaker		\boxtimes		
Fire Alarm Button	Bilge Alaı			Ц	Emergency I	Lighting	× ×		
GA Alarm Button Comments / Recommendations	General A	Alarm		\square	Other:				
Telephone #380									
Fire alarm button XS172922 in mud pump ro	om #1 and X	S172844 i	in pas	sageway.					
ESCAPE ROUTES:									
Exit to portside passageway of 3 rd deck. Up	ladder to Mai	in Deck							
COMPARTMENT: Electrician's SI	hop								
FIRE:	<u>. </u>								
Ignition Sources / Fuel			Pro	eventions	(Note EX equ	uipment)			
Electrical wiring/shorts					naintenance a		ns		
Flammable aerosols			Ho	usekeepir	ng	-			
Class A materials									
Consequences Mitigations									
Possibility of damage to equipment/	compartme	ent			apabilities				
Possibility of injury to personnel			Av	ailability o	f medical treat	tment			
Risk 9 Risk Catego	ry: Low				ALARP?	: Yes			
Rank:	.,								
EXPLOSION:									
Ignition Sources / Fuel			Pre	eventions	(Note EX equ	upment)			

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		<u> </u>	
Consequences		Mitigations	
Risk	Risk Category:		ALARP?: Yes / No
Rank:			
FLOOD:			
Hazards		Preventions	
		Drains.	
Consequences		Mitigations	
•			-
Risk	Risk Category:		ALARP?: Yes/No
Rank: OTHER: Electricla s	h a d		
Hazards		Preventions	
Contact with live ener	av sources	PTW, energy iso	lation PPF
Contact with live cher	gy sources		tenance and inspections
Consequences		Mitigations	
Possibility of injury to	personnel		edical treatment including
Possibility of fatality		medivac	_
Risk 15	Risk Category: Medium		ALARP?: Yes
Rank:			
RECOMMENDATION			
Consider the installati	on of an approved flammables	storage locker for ti	his space.

Engine Control Room		
- -		
2 nd Deck, Centerline Aft		
x. 18x27x8	MANNING:	1
TROL LINES:		
	2 nd Deck, Centerline Aft x. 18x27x8 TROL LINES:	2 nd Deck, Centerline Aft x. 18x27x8 MANNING: TROL LINES:

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APPENDIX II

CONTROL SYSTEMS:						110 10 10		
Simrad SVC (SVC-04 & SVC-0	5)			Fire 8	R Gas Emero	gency Shutdown ((ESD) panel	
Backup DP Control (SDP-04)	- ,				ndant GMD		(LOD) parie	
Backup Thruster Control (STC-	02)			MRU #1				
Backup DP Computer (DPC-12)			DGP:	S #1 Decode	er and Controller		
HVAC / DUCTING:		AND DESCRIPTION OF THE PARTY OF						
Recirculation and make-up air								
DACCOVE FUEL DECATE	TION:							
PASSIVE FIRE PROTECT	-60			Das	khead:	A-60	`	
1								
	\-60				Bulkhead:			
Port Bulkhead: A	\-60				rboard khead:	A-60	,	
Comments / Recommen	ndations			Dui	meau.			
Comments / Recommen	luations							
FIRE/GAS DETECTION:								
	Space	Du	ct			I	Space	Duct
Constant Manning				Hvo	Irocarbon	Detector(s)	_ i⊓	
Flame Detector(s)			1		Detector		Ħ	
Heat Detector(s)	l H		1		er:		H	l H I
Smoke Detector(s)		-	╡	Oui	CI		ш	
Comments / Recommendations								
Smoke Detectors #ASH-17252		710						
FIRE FIGHTING EQUIPM	MENT:							, quant
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher	(s)	l 'n	l'n		CO ₂ Ext	inguisher(s)	⊠	
H ₂ O Extinguisher(s)	(-)	1 17			Foam			
1 1 2 2 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1		-			Extinguis	sher(s)	"	
Fixed H₂O (Deluge, Sprin	klers					er Hose(s)		
etc.)	iniois,	"			1 110 1101	.01 11000(0)	"	
Fixed Halon					Fixed Co	1		
Other: Fire Axe					I IXEG C	\mathcal{J}_2		
Comments / Recommer	adations					_		
No fire station in or adjacent to								
Nearest stations are in E/R's 2		id numn room	and ethr	ahis h	of main CO	Nocker All will re	itibhe an ariuna	onal length of
hose to reach space.	٠, III داد ا	ad painp roon	i and sto	a oluc	or main ooz	L IOCKET. All WILLIA	equire an additi	orial length of
COMMUNICATIONS, ET	C. :							
Tolonhono	\boxtimes	CCTV				PA Speaker		\square
Telephone		Bilge Alar	m			Emergency	Liahtina	\boxtimes
Fire Alarm Button	\bowtie				$\overline{\boxtimes}$,	0	
	\boxtimes	•	Nam		1/2/	I Others: GML	JSS Station.	
Fire Alarm Button	\boxtimes	General A	Alam				DSS Station. Soundpowere	
Fire Alarm Button GA Alarm Button Comments / Recommen	⊠	•	Alarm			Talk-back, S		
Fire Alarm Button GA Alarm Button Comments / Recomment Telephone #'s 268 & 269	⊠	•	Alam ———					
Fire Alarm Button GA Alarm Button Comments / Recomment Telephone #'s 268 & 269 Talk-back #17	⊠	•	Alarm					
Fire Alarm Button GA Alarm Button Comments / Recomment Telephone #'s 268 & 269 Talk-back #17 Sound Powered Phone #13	⊠	•	Alarm					
Fire Alarm Button GA Alarm Button Comments / Recommer Telephone #'s 268 & 269 Talk-back #17 Sound Powered Phone #13 ESCAPE ROUTES:	⊠ ndations	General A	Alarm					
Fire Alarm Button GA Alarm Button Comments / Recomment Telephone #'s 268 & 269 Talk-back #17 Sound Powered Phone #13	ndations en up to Main	General A	Marm					

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COMPARTMENT: Engine Control Room					
FIRE:					
Ignition Sources / Fu	el	Preventions (Note EX equipment)			
Electric wiring /shorts		Preventive maintenance and inspections			
Class A materials		Housekeeping			
Consequences		Mitigations			
Possibility of damage to equipment/compartment		Firefighting capa	bilities		
Possibility of injury to	personnel	Availability of me	dical treatment including		
		medivac	•		
Risk 14	Risk Category: Medium		ALARP?: Yes		
Rank:			1		
EXPLOSION:					
Ignition Sources / Fu	el	Preventions (No	ote EX equipment)		
<u> </u>		11,515,111,5115 (715	NO 2 C OGUIPINOINI		
Consequences		Mitigations			
Risk	Risk Category:		ALARP?: Yes / No		
Rank:					
FLOOD:					
Hazards		Preventions			
- All		Drains.			
Consequences		Mitigations			
Consequences		Milligations			
Risk	Risk Category:		ALARP?: Yes / No		
Rank:	mon outogory.		7.27.11.17		
OTHER:	The state of the s				
Hazards		Preventions			
TIGEGIA O		1.010			
Consequences		Mitigations			
Risk	Risk Category:	-	ALARP?:		
Rank:					
RECOMMENDATION	S:				

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Transocea	n	RI	SK ASS	SESS	T HAZARD MENT ORIZON			APPENDIX III
COMPARTMENT NAME:	Engine I							
LOCATION:		2 nd and 3	^{ra} Deck	<u>s</u>				
	, 22m x 10				MANNING: As	requi	red	
POWER / FLUID / CONT								
7 MW Diesel generator with asso to column, fire pump #2, fuel pun potable water lines								
CONTROL SYSTEMS:								
LP-051 panel (236051), LP-050 p connection panel for welding out		0), Fire and	Gas juno	tion be	ox (FJBCO1), elevator o	control	panel (26800	3), No.2
HVAC / DUCTING:								
Supply vent fan - SF1, Exhaust v 000-H1010 sheet 7/13		1, Supply to	Port Aft	colum	n ducting along elevator	r shaft	DWG Ref. #	HRBS-H68-
PASSIVE FIRE PROTECT	TION:							
Deck: C Forward Bulkhead: A6	80				ckhead: Bulkhead:	C		
Forward Bulkhead: C Port Bulkhead: C Starboard A60 Bulkhead:								
Comments / Recomment 30 Bar start air receivers relief va		piped to the	outside					
FIRE/GAS DETECTION:								
TIKE/GAS DETECTION:	Space	Du	ıct	Γ			Space	Duct
Constant Manning			100	Hvo	irocarbon Detector	(s)		
Flame Detector(s)	$\overline{\boxtimes}$		7		Detector(s)	`'	Ħ	
Heat Detector(s)					er:	_		
Smoke Detector(s)	⊠							
Comments / Recommend	dations							
FIRE FIGHTING EQUIPM	ENT:							
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(s	s)]	CO ₂ Extinguisher	(s)		
H ₂ O Extinguisher(s)	•	\square		İ	Foam Extinguisher(s)	(-)		
Fixed H ₂ O (Deluge, Sprinklers,					Fire Water Hose(s)	\boxtimes	
etc.) Fixed Halon					Eived CO			
Other:				1	Fixed CO ₂		\boxtimes	
Comments / Recommend	lations							
Generator has fixed CO2 system.		ole CO2 also	available	e in sp	pace			
				,				
DEVISION NO:								
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COMMUNICATIONS						
Telephone	\boxtimes	CCTV	⊠	PA Spe		\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alarm			ency Lighting	\boxtimes
GA Alarm Button		General Alarm	\square	Other: _	<u> </u>	
Comments / Recomi						
Space has "Dead Mai	n" button					
ESCAPE ROUTES:						
Primary: FWD to Mud pum to AMR #2 on 3 rd deck; 4.	p room on 3 rd dec Aft and STBD to s	k. Alternative: 1. Fwd switchboard room #1	to weld shop on 2	nd deck; 2.	Aft to main deck; 3	. Aft and STBD
COMPARTMENT:	Engine Room	#1				
FIRE:						
Ignition Sources / Fu	iel		Preventions	(Note E	X equipment)	
Electric wiring shorts,	metal on meta	al wear, sparks			ce and inspect	ions
from hot work if ongoi	ng. Fuel oil a	nd lube oil	Engine prote	ection sys	tem/required by	y class
			society			
			housekeepir	ıg		
Consequences	_		Mitigations			
Possibility of damage Possibility of injury to	ESD 1/1, Remote ventilation shutdown, fuel supply valves outside of space, ventilation fusible links Firefighting capabilities. Redundant engines Availability of medical treatment including medivac					
Risk 9 Risk Category: Low ALARP?: Yes Rank:						
EXPLOSION:						
Ignition Sources / Fu	iel		Preventions	(Note E	X equipment)	
		earing			tem as required	d by class
Crankcase explosion: overheated bearing Lube oil and fuel oil			society, Engine performance monitoring by SIMRAD, Personnel rounds of equipment			
Consequences			Mitigations			
Possibility of damage	to equipment	/compartment		mote ven	tilation shutdov	vn fuel
Possibility of injury to		companinom	supply valves outside of space, ventilation fusible links Firefighting capabilities. Redundant engines			
			Availability o	f medical	treatment inclu	uding
	1		medivac			
Risk 9 Rank:	Risk Catego	ory: Low		AL	ARP?: Yes	
FLOOD:						
Hazards		_	Preventions	3		
Could be from rupture	ed salt water li	nes but not from	Preventive maintenance and inspections			
the sea.					_	
Consequences			Mitigations			
No permanent installation of bilge pumping equipment, Flooding could flow to other spaces.			Systems supplying the water may be secured. This would result in the shutdown of other systems using the water.			
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Risk 9 Rank:	Risk Category:	Low		ALARP?:	Yes	
OTHER: Electrical s	hock			.Ede. College		
Hazards	HOCK		Preventions			
Contact with live ene	rgy sources		Preventive mainted PPE, PTW, energy		nspectio	ns
Consequences			Mitigations			
Possibility of injury to Possibility of fatality	personnel		Availability of me medivac	dical treatme	nt includ	ing
Risk 15 Rank:	Risk Category:	Medium		ALARP?:	Yes	
RECOMMENDATION	vs:		•			
COMPARTMENT NAME:		m Store- Port			- III - II - II - II - II - II - II -	
LOCATION:		Deck- Outboa	rd of Engine Room			
	X 6m		MANNING:	As required		
POWER / FLUID / Comments / Recomments / Reco	Cables 1 Outlets (WOJB-2) 1 Page 1 Page 2 Pa		Sea water lines Fire and Gas Junction E Battery Charger (24820 Rig air lines Control Signal Cabling FD-37, FD-64, FD-75/76 Deckhead: Aft Bulkhead: Starboard Bulkhead:	(5A))	
Penetrations for piping in a						
FIRE/GAS DETECTI						_
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s) Comments / Recom Smoke Detector #ASH172		Duct	Hydrocarbon Dete H₂S Detector(s) Other:		space	Duct
This below morning						
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APPENDIX	п
ALLEIADIX	• •

FIRE FIGHTING EQU	JIPMENT:							
		Space	Adjace	nt			Space	Adjacent
Dry Powder Extinguis	her(s)				CO ₂ Ext	inguisher(s)		
H ₂ O Extinguisher(s)		∣ ⊣	l H		CO ₂ Extinguisher(s)			
2 = = :::: 3 :::::::::(0)				Extinguisher(s)				
Fixed H ₂ O (Deluge, S	prinklers.					ter Hose(s)		
etc.)						- (-)		
Fixed Halon					Fixed Co	O_2		
Other:						-	_	
Comments / Recomments	mendations							
Fire Station #61								
CO2 Extinguiser #132								
COMMUNICATIONS,	ETC. :							
Telephone	\boxtimes	CCTV				PA Speaker		\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alar				Emergency i	_ighting	\boxtimes
GA Alarm Button		General A	Alarm		\boxtimes	Other:		
Comments / Recomm								
Telephone #371 (Engine R								
Fire Alarm Button #XS1729	} 111							
ESCAPE ROUTES:								
Primary: Aft to passageway Afternate: Forward into Wel		deck						
Alternate: Ladder down to E								
		Poom Port		_				
FIRE:	Engine Store F	toom Poll		_				
Ignition Sources / Fu	.ol			Dr	avantiana	(Note EX equ	uinment)	
	<u> </u>							
Electric wiring/shorts				Pro	eventive n	naintenance a	na inspectio	ns
Consequences				Mi	tigations			
Possibility of damage	to equipment	compartm	ent			capabilities	_	
Possibility to injury to		Comparan	O'II			of medical treat	tment	
1 cosibility to injury to	personner			, · · •	unubinty o	i inodiodi trodi	anone	
Risk 9	Risk Catego	orv: Low				ALARP?	?: Yes	_
Rank:	Kisk Calego	JIY. LOW				ALAINE:	. 165	
EXPLOSION:								
Ignition Sources / Fu				Dr	eventions	s (Note EX equ	uinment)	
ightion sources / Ft	<u></u>			-1	eveniloik	THULE EN BY	ирин он и	
Consequences Mitigations								
- magazione								
Risk	Risk Catego	orv:	_		_	ALARP	?: Yes/N	0
Rank:	22.39	, .						
FLOOD:								
Hazards				Pr	eventions	<u> </u>		

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		Drains.				
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?: Yes / No			
OTHER: Hazards		Preventions				
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:			
RECOMMENDATION	S:					

	The second secon		
COMPARTMENT	Equipment Room fwd of I	Oriller's store	
NAME:			
LOCATION:	Stbd side, 46m above bas	se line, fwd of drill s	store
DIMENSIONS: App	orox. 2m x 4m	MANNING:	None
POWER / FLUID / CO	ONTROL LINES:		
480V and 120 V cables and	Breaker panels. 208v.		
l			
CONTROL SYSTEMS	S:		
Switch for exhaust fan insid	le door. Switch for supply fan outside d	oor.	
Standby power panel, norm	nal power panel,		
HVAC / DUCTING:			
Forced supply and exhaust	. No dampers.		
	•		
PASSIVE FIRE PRO	TECTION:		
Deck:	A-0	Deckhead:	A-0
Forward Bulkhead:	A-0	Aft Bulkhead:	A-0
Port Bulkhead:	A-0	Starboard	A-0
on buildied.	A-0		7- √
		Bulkhead:	

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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Comments / Recommendations									
No dampers on supply or ex	thaust ducting.								
FIRE/GAS DETECTION	N:								
	Space	Du	ict				\neg	Space	Duct
Constant Manning		_	_		irocarbon		(s)		1 🔲
Flame Detector(s)		_	_		Detector				
Heat Detector(s)		<u> </u>	ן וַ	Oth	er:		_		
Smoke Detector(s)									
Comments / Recomn									
Only indication of fire would	be visual indication	on of smoke	issuing fro	om ex	thaust.				
FIRE FIGHTING EQU	IPMENT:								
	_	Space	Adjac	ent				Space	Adjacent
Dry Powder Extinguish	ner(s)				CO ₂ Exti	nguisher	(s)		
H ₂ O Extinguisher(s)	• •				Foam	•	(-)) Fi
		_	–		Extinguis	sher(s)		–	_
Fixed H ₂ O (Deluge, Sp	orinklers,				Fire Wat		s)		
etc.)						`	•	_	-
Fixed Halon					Fixed CO	D_2			
Other:									
Comments / Recomm	nendations								
Nearest hose reel and exting	guisher are on rig	floor aft of th	ne drawwa	orks					
COMMUNICATIONS,	ETC. :								
Telephone		CCTV		☐ PA Speaker ☐					
Fire Alarm Button		Bilge Alar				Emerge	ncy l	_ ight ing	\boxtimes
GA Alarm Button					Other:				
Comments / Recomm	nendations								
GA alarm button located directly outside space.									
ESCAPE ROUTES:									
Out the only door and fwd down to the main deck or aft into the drill store.									
COMPARTMENT. F	i Do	6d o.6 !	Daitlada	Char					
	quipment Roc	om iwa oi i	Dillers	Stor	<u>e</u>				
FIRE:				D.		/Mata F	V 000	inmont)	_
Ignition Sources / Fu	eı				eventions				
Electric wiring/shorts							ice ai	nd inspecti	ons
Class A materials				Housekeeping					
Lubricants/greases									
Consequences	Consequences				Mitigations				
	o equipment/	compartme	ent	Firefighting capabilities					
a	Possibility of damage to equipment/compartment			Availability of medical treatment including					
Possibility of injury to personnel					edivac	. mounoui	oui		ig
Risk 9									
Rank:	NISK CALEGO	iy. Low				AL/	1 17 !	. 165	
EXPLOSION:									
				D-	eventions	(Noto E	Y 000	uinment)	
Ignition Sources / Fuel				+	eventions	(NOTE E	n equ	иртепц	
Consequences				Mitigations					
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			_	
Risk Rank:	Risk Category:		ALARP7:	Yes / No
FLOOD:				
Hazards		Preventions		_
Tiuzurus		Drains.		
Consequences		Mitigations		
Risk Rank:	Risk Category:		ALARP?:	Yes / No
OTHER:				
Hazards		Preventions		
Consequences		Mitigations		
RECOMMENDA	TIONS:			

COMPARTMENT	ET Shop		
NAME:	<u> </u>		
LOCATION:	3rd Deck Aft Centerline- Fwd of	Engine Cont	rol Room
DIMENSIONS: 5m X 5m	1	MANNING:	Intermittent
POWER / FLUID / CONTR	ROL LINES:	•	
24V Distribution Panel (181053-2), 120v		
#2 Navigation & Communication	AC Pop. Panel (248104)		
Fiber Optic Control Panel (LAN-3	68002)		
Gyro Distributor Box (181053)			
CONTROL SYSTEMS:			
Akusta System			
Gyro System 01			

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HVAC / DUCTING:				-						
HVAC Ventilation Ducting										
PASSIVE FIRE PRO	TECTION:									
Deck:	A-60			De	ckhead:		A-60)		
Forward Bulkhead:	A-60				Bulkhead		A-60			
Port Bulkhead:	A-60				rboard		A-60			
					khead:					
Comments / Recom	mendations									
FIRE/GAS DETECTI	ON:		•							
	Space	Du	ıct				- . T	Space	Du	ct
Constant Manning				Hvd	drocarbon	Detector	(e)			7
Flame Detector(s)		Г	٦		Detector		(3)	H	- ⊢	╡
Heat Detector(s)		F	╡		er:			H	- ⊢	4
Smoke Detector(s)			=	Oil			-			_
Comments / Recom	mendations									
Smoke Detector #ASH-172										
FIRE FIGHTING EQU	JIPMENT:									
		Space	Adjac	ent				Space	Adja	cent
Dry Powder Extinguis	sher(s)				CO ₂ Ext	inguisher	(s)			1
H ₂ O Extinguisher(s)					Foam	•	` ,			Ī
					Extinguis			_		_
Fixed H ₂ O (Deluge, S	Sprinklers,				Fire Wat	er Hose(s)]
etc.)					-					
Fixed Halon					Fixed Co	O_2				
Other:										
Comments / Recom	mendations									
CO2 Extinguisher in 480V										
CO2 Release for 480V Sw	· · · · · · · · · · · · · · · · · · ·	in space	<u> </u>							
COMMUNICATIONS	, ETC. :									
Telephone	\boxtimes	CCTV				PA Spe				\boxtimes
Fire Alarm Button		Bilge Alaı					ncy Lighting		\boxtimes	
GA Alarm Button		General Alarm			\boxtimes	Other:				
Comments / Recom	mendations									
Telephone #270										
FECARE POLITICA									_	
ESCAPE ROUTES:						_				
Exit to port into passagewa Exit to stbd in 480V Switch										
								· · · · · · ·		
	ET Shop									
FIRE:				T-				, ,		
Ignition Sources / Fo	uei				eventions					
Electric wiring/shorts								nd inspecti		
Heat gun				Ca	ire in the i	ise of hea	at ger	nerating ha	ind tools	
Soldering iron										
Class A materials										
Consequences					tigations					
Possibility of damage		compartme	ent		refighting (
Possibility of injury to	personnel					f medical	treat	ment inclu	ding	
				me	edivac					
DE1/10/01/11/0										
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APPENDIX	III
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Risk 9 Rank:	Risk Category:	Low		ALARP?:	Yes
EXPLOSION:	- A				
Ignition Source	es / Fuel		Preventions (No	te EX equipi	nent)
3					
Consequences	3		Mitigations		
Risk Rank:	Risk Category:			ALARP?:	Yes / No
FLOOD:					
Hazards			Preventions		
			Drains.		
Consequences	3		Mitigations		
Risk	Bick Cotonon			ALARP?:	Yes / No
Rank:	Risk Category:			ALARP?	TES / NO
OTHER:					
Hazards			Preventions		
Consequences	S		Mitigations		
RECOMMEND	ATIONS:	-			

COMPARTMENT	Fuel Oil Purifier Room Port	
NAME:		
LOCATION:	Port Aft – 3 rd deck	

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APPENDIX II

DIMENSIONS: 149	m3, 6.9m x 6.	8m			MANNIN	G: Not	Nomall	y Manne	ed
POWER / FLUID / CO		S:				*			
120v, sea water, rig air, pol	t water								
Lube oil, fire water, diesel									
CONTROL SYSTEMS									_
IJB-302 instrument junction	box, IJB-301 inst	rument juncti	on box, co	ntrols fo	or #1&2 fu	el oil purifie	rs and lube	oil purific	er.
HVAC / DUCTING:									
Natural supply air duct, Exh	naust fan - EF59.	DWG Ref. #	HRBS-H6	8-000-F	H1010 she	et 7/13			
PASSIVE FIRE PRO	TECTION			_					
Deck:	C			Deckh	head:		С		
Forward Bulkhead:	Č				ulkhead:		A60		
Port Bulkhead:	č		1	Starbo			C		
T OIT Daikilead.	J			Bulkh			•		
Comments / Recomi	mendations								
FIRE/GAS DETECTION	ON:								
	Space	Du	ct				S	pace	Duct
Constant Manning				Hydro	carbon I	Detector(s)		
Flame Detector(s)]	H2S D	Detector(s)			
Heat Detector(s)					:`				
Smoke Detector(s)			j				-	_	
Comments / Recomi	mendations	_							·
FIRE FIGURES FOL									
FIRE FIGHTING EQU	JIPMENT:	Cooo	Adioss						Adiacont
Day Douglas Estinavia	hor(o)	Space	Adjace		20 Evi	aguicher/		pace	Adjacent
Dry Powder Extinguis	ner(s)	H				nguisher(5)	\boxtimes	\boxtimes
H₂O Extinguisher(s)		⊔		1 -	Foam Extinguis	hor(o)			
Fixed H.O. (Deluge C	nrinklare					er Hose(s	.		
Fixed H ₂ O (Deluge, S	prinklers,			'	THE YVAL	ei 11056(5	"		
etc.)					Eiwad CC			\boxtimes	
Fixed Halon Other:		│ ├		'	Fixed CC	' 2			
Comments / Recomm	mendations								
Comments / Recomm	inc il dations								
COMMUNICATIONS	, ETC. :								
Telephone	\boxtimes	CCTV				PA Spe			\boxtimes
Fire Alarm Button		Bilge Alaı			□	_	ncy Ligh	ting	\boxtimes
GA Alarm Button		General /	۹lam			Other: _			
Comments / Recom									
Fire alarm buttons in adjac	ent spaces (engin	e room #1 an	d mud pur	mp roon	n).				
ESCADE POLITES									
ESCAPE ROUTES:								-	
	T								
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APPENDIX III

Primary: Aft to engine room #1, Alternative: STBD to mud pump room

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Preventive maintenance and inspections.				
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APPENDIX	ш
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Risk	Risk Categor	<u>ν:</u>			AL	ARP?		
Rank:		,.						
RECOMMENDATION	IS:							
COMPARTMENT	Galley							
NAME:	ond -tt-							
LOCATION: DIMENSIONS: App			odation	pioci	k, outboard of mes	s roon	<u> </u>	
POWER / FLUID / CO	rox. 12m x 5.5r				MANNING: 3	A1 E1		
120v, pot water	INTROL LINES);						
1207, por mater								
CONTROL SYSTEMS	3:							
Controls for Supply and Ex	naust fans, Dishwa	sher, hood f	ans, Disp	osals,	Ovens.			
15/40 / BUGTING					y. /			
HVAC / DUCTING:				#0				
Isolated ventilation system,	separate exhaust o	over stove.	rire zone	#9				
PASSIVE FIRE PRO	TECTION:							
Deck:	A-0			Dec	khead:	A-0		
Forward Bulkhead:	A-0		ľ		Bulkhead:	B-30		
Port Bulkhead:	A-0				board	A-0		i
Comments / Bosom	mandations			Bulk	thead:			
Comments / Recomments / Recomme		s with a hea	it activate	ed rele	ase			
The serving into and deserv	area nave paraner							
FIRE/GAS DETECTION	<u> </u>							
FINE/GAS DETECTION	Space	Du	ct			$\overline{}$	Space	Duct
Constant Manning				Hvd	rocarbon Detector	(s)		
Flame Detector(s)]	H ₂ S	Detector(s)	`		
Heat Detector(s)]	Oth	er:	_		
Smoke Detector(s)								
Comments / Recomm	nendations							
FIRE FIGHTING EQU	IPMENT:							
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguis	her(s)				CO ₂ Extinguisher	(s)	\boxtimes	
H₂O Extinguisher(s)			· 🗀		Foam			
Fixed H₂O (Deluge, Sprinklers, ⊠		\square			Extinguisher(s) Fire Water Hose(۱,	П	
etc.)		THE WATEL HOSE	3)					
Fixed Halon					Fixed CO ₂			
<u> </u>		_				<u>'</u>		
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Other: Fire Blank	et 🖂 🗆	· 		
Comments / Recom				
Range Hood has a Fire St	uppression system using wet chemical R-	102		
COMMUNICATIONS	6, ETC. :			
Telephone	□ CCTV		peaker	\boxtimes
Fire Alarm Button	🗵 Bilge Alarm		gency Lighting	
GA Alarm Button	General Alarm		r:	
Comments / Recom	mendations			
ESCAPE ROUTES:				
	oom then forward through door to lifeboat	deck		
· on door, among it mood it		. 400111		
COMPARTMENT:	Galley	,		
FIRE:				
Ignition Sources / F		Preventions (Note		
Electric wiring/shorts		Preventive mainten	ance and inspect	
Hot equipment		Housekeeping - spe		vith oily cloths
Cooking oil/deep fat		Care taken in cook		
Oily/greasy cleaning	cloths	Catering crew train	ed in fire preventi	on
Consequences		Mitigations		,
	to equipment/compartment	Firefighting capabil		
Possibility of injury to	personnel	Availability of medic medivac	cal treatment incl	uding
Risk 9	Risk Category: Low	A	LARP?: Yes	
Rank:				
EXPLOSION:				
Ignition Sources / F	uel	Preventions (Note	EX equipment)	
Consequences		Mitigations		
Consequences		Miligations		
Risk	Risk Category:	Δ	LARP?: Yes /	No
Rank:				
FLOOD:				
Hazards		Preventions		_
		Drains.		
Consequences		Mitigations		
Consequences		Willigations		
Risk	Risk Category:	Α	LARP?: Yes /	No
Rank:				
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APPENDIX	ш
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OTHER: Burns					
			Preventions		
Contact with hot surfaces, hot oils		PPE			
		Housekeeping	Housekeeping		
Consequences		Mitigations			
Possibility of injury t	o personnei	Availability of medical tr	eatment includ	ing	
Dist.	T D'-1 O-1	medivac	<u></u>		
Risk 9	Risk Category: Low	ALAR	P?: Yes		
Rank:	NO.				
RECOMMENDATIO)NO:				
COMPARTMENT	Gymnasium / Sauna	3			
NAME:					
LOCATION:	3 rd deck, aft end of a	accommodation, centerline			
DIMENSIONS: A	oprox. 3.5m x 9m	MANNING: 0-4			
POWER / FLUID / C	ONTROL LINES:				
120V power outlets, pot v	vater				
CONTROL SYSTE	MS:				
Fire main isolation valve					
Sauna controls					
HVAC / DUCTING:					
Fire Zone 12 (sauna) and	1 13 (gym)				
PASSIVE FIRE PRO	OTECTION:				
Deck:	A-0	Deckhead: A-	0		
Forward Bulkhead:	B-30	1	60		
Port Bulkhead:	A-0		30		
		Bulkhead:			
Comments / Recor	nmendations				
FIRE/GAS DETECT	ION:				
	Space Duc	t	Space	Duct	
Constant Manning		Hydrocarbon Detector(s)			
Flame Detector(s)		H ₂ S Detector(s)			
Heat Detector(s)		Other:			
Smoke Detector(s)					
Comments / Recor	nmendations				

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FIRE FIGHTING EQU	IPMENT:							
Dry Powder Extinguis H ₂ O Extinguisher(s)	her(s)	Space	Adjacen	CO ₂ Extinguisher(s) Foam Extinguisher(s)		Space	Adjacent	
Fixed H ₂ O (Deluge, S etc.)	prinklers,	\boxtimes			er Hose(s	s)		
Fixed Halon Other:				Fixed Co	O_2			
Comments / Recomments	mendations		<u> </u>			_		
	·				_			
COMMUNICATIONS								
Telephone	\bowtie	CCTV		닏	PA Spe			\boxtimes
Fire Alarm Button	닏ㅣ	Bilge Alai			Emerge			Ŋ
GA Alam Button		General A	Alarm		Other: 8	signa	I light tree	<u> </u>
Comments / Recom	mendations				_			
ESCAPE ROUTES: Out fwd door, straight to do	oor leading to outsi	de 3'd deck o	directly under	rneath lifeboat	deck.			
	Gymnasium / S	Sauna			· · · · · ·			
FIRE:								
Ignition Sources / Fo				Preventions				
Heating element in sa	auna			Preventive maintenance and inspection for timer				
Wood construction								
Consequences				Mitigations				
Possibility of damage Possibility of injury to		nt		Firefighting of availability of medivac			ment inclu	ding
Risk 9 Rank:	Risk Catego	ry: Low			ALA	ARP1	?: Yes	
EXPLOSION:								
Ignition Sources / Fo	uel			Preventions	s (Note F	X ea	uinment)	
Consequences				Mitigations	·	•	,	
Risk Rank:	Risk Catego	ory:			AL	ARP	?: Yes/I	No
FLOOD:	<u> </u>							
Hazards				Preventions	S			
				Drains.				
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Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
OTHER:						
Hazards		Preventions				
Consequences		Mitigations				
Risk	Risk Category:	•	ALARP?:	Yes / No		
Rank:						
RECOMMENDATION	DNS:					

COMPARTMENT	Helideck				
LOCATION:	Port Fwd	, above CCR/E	Bridge		
	ctagonal 22.3 me		MANNING:	Intermittent helo o	ne/ recreation
POWER / FLUID / C			MANNING.	intermittent nelo o	ps/ recreation
120v, Helifuel dispensing	- 100111). 			
Firefighting water and for					
CONTROL SYSTEM	MC.				
Controls for helifuel and					
Controls for Helliuer and I	rremoarn				
1					
1044045454	_				
HVAC / DUCTING:					
Open deck					
PASSIVE FIRE PRO	OTECTION:				
Deck:	Α -		Deckhead:	Open	
Forward Bulkhead:	Open		Aft Bulkhead:	Open	
Port Bulkhead:	Open		Starboard	Open	
	•		Bulkhead:		
Comments / Recor	mmendations				
FIRE/GAS DETECT	TION:				
_	Space	Duct		Space	Duct
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Transoce	an	MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON					APPENDIX III		
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s)				H ₂ S	Irocarbon Detector er:_		(s)		
Comments / Recomme		ps							
FIRE FIGHTING EQUIP	MENT:							, , , ,	-
Dry Powder Extinguishe H ₂ O Extinguisher(s)	er(s)	Space	Adjac	ent	CO ₂ Ext Foam Extingui	inguisher	(s)	Space	Adjacent
Fixed H ₂ O (Deluge, Spri	inklers,	\boxtimes				ter Hose(s)		
Fixed Halon Other: Foam monitors					Fixed Co	O_2			
Comments / Recomme	endations							ı	L
Space is manned by fire	efighters dur	ing helo op	os.						
COMMUNICATIONS, E	TC. :								
Telephone		CCTV			\square	PA Spe	aker		
Fire Alarm Button	\boxtimes	Bilge Alai	m			Emerge	ency	Lighting	
GA Alarm Button		General A	Alam			Other:_/	<u>Aviati</u>	on Radio	\square
Comments / Recomme									
HLO in radio contact with helic No P/A speaker on Helideck, h			akers are	audib	de from helio	deck.			
ESCAPE ROUTES: 3 – starboard side, forwa	ard and nod	aft Allar	o cloarl	u ma	rked				
	lideck	ait. Aii ai	C GCan	<i>y</i> 1110	ikeu				
FIRE:	ildeok								
Ignition Sources / Fuel				Pr	eventions	s (Note E	X ea	uipment)	
Helicopter crash (major		es)				•	•	,	
Consequences				Mi	tigations				
								-	
Rank:	Risk Catego	ory:				ALA	ARP?	Yes/	No
EXPLOSION:									
Ignition Sources / Fuel				Preventions (Note EX equipment)					
Helicopter crash (major	nazaro table	es)							
Consequences				Mi	tigations				
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Risk	Risk Category:		ALARP?:	Yes / No
Rank:				
FLOOD:	·	<u> </u>		
Hazards		Preventions		
		Drains.		
		274		
Consequences		Mitigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:	The Caregory.		ALAKI	1037110
OTHER:				
Hazards		Preventions		-
Helicopter crash (majo	or hazard tables)	TTOVOILLOIS		
Trencopter order (maj	or nazara tables)			
Canaaauanaaa		5.6141 m.m.41 m.m.		
Consequences		Mitigations		
				·
Risk	Risk Category:		ALARP?:	Yes / No
Rank:			ALARP?:	
			ALARP?:	
Rank:			ALARP?:	

COMPARTMENT NAME:	Hospital						
LOCATION:							
	n X 9m	MANNING: 1	<u> </u>				
POWER / FLUID / CO	ONTROL LINES:						
120V Outlet and Lighting C Breathing Oxygen Supply Potable Water							
CONTROL SYSTEM	S:						
Local control for exhaust fan.							
HVAC / DUCTING:							
Has its own isolated v	ventilation system						
PASSIVE FIRE PRO	TECTION:		•				
Deck:	A	Deckhead:	Α				
Forward Bulkhead:	B-30	Aft Bulkhead:	B-30				
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APPENDIX	Ш
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Port Bulkhead:	B-30				rboard khead:		B-30			
Comments / Recomi	mendations									
FIRE/GAS DETECTION	ON:		table,						• • • •	
FIRE/GAS DETECTION	Space	Du	ct					Space	Duc	ct
Constant Manning				Hyc	Irocarbon	Detector	(s)			Ĩ
Flame Detector(s)]		Detector		`			
Heat Detector(s)]	Oth	er:		_			j
Smoke Detector(s)]		_					
Comments / Recomi										
Smoke Detector #ASH-172	2413									
FIRE FIGHTING EQU	JIPMENT:									
		Space	Adjac	ent				Space	Adjac	ent
Dry Powder Extinguis	her(s)		\boxtimes		CO ₂ Ext	inguisher	(s)			
H ₂ O Extinguisher(s)					Foam					ł
Fived II O (Delve - O	main blace				Extinguis		-\		K2	1
Fixed H ₂ O (Deluge, S	prinkiers,				Fire vvai	er Hose(s)			ı
etc.) Fixed Halon					Fixed Co) .				
Other:			Ιп		I IXCU O	J ₂				
Comments / Recomments	mendations		ليسا							
Fire Station #21 in passage	eway									
COMMUNICATIONS	, ETC. :									
Telephone	\bowtie	CCTV				PA Spe			Ĺ	_
Fire Alarm Button	닏	Bilge Alar			\vdash	Emerge				걸
GA Alarm Button Comments / Recomments	mondations	General A	Nam			Otner: I	lospit	al Call Butto	ns L	<u> </u>
Telephone #250. PA spea		connected to a	prevent in	terfer	ence with pa	tient care	consid	ler the install	ation of a P	
speaker with adjustable vol	lume in this space		provent in		01100 11111 pc	mont our c,.	0011010	ioi tiio iiiotaii		•
ESCAPE ROUTES:										
When exiting the hosp lifeboat launch deck.	pital into the pa	assage way	y, take a	a left	and go st	raight thr	ough	the hatch	onto the	
COMPARTMENT:	Hospital									
FIRE:	•									
Ignition Sources / Fu	uel			Preventions (Note EX equipment)						
Electric wiring/shorts				Preventive maintenance and inspections						
Class A materials				Housekeeping						
Medical grade oxyger	1									
Consequences			-	8.0	tiantiana					
Possibility of damage	to equipment/	compadme	ant		tigations	anahilitia			_	
Possibility of injury to	Possibility of damage to equipment/compartment Possibility of injury to personnel			Firefighting capabilities Availability of medical treatment including						
	F 2140111101				edivac	. modioa	oai		9	
Risk 9	Risk Catego	ry: Low				AL	ARP?	: Yes		
Rank: EXPLOSION:				_						
Ignition Sources / Fu	اعا			Dr	eventions	(Noto E	Y 200	uinmant)		
iginaon Jources / Ft		_		1	evenuons	(NOTE E	1 6 di	притепи)		
DEMONANTA	04						_			
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0				
Consequences		Mitigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:				
FLOOD: Hazards		Dreventions		
Hazalus		Preventions Drains.	_	
		Diams.		
Consequences		Mitigations	<u>_</u>	
Risk	Risk Category:		ALARP?:	Yes / No
Rank:				1007110
OTHER: Biological				
Hazards		Preventions		
Exposure to pathoger	ns	PPE		
0		8.6***		
Consequences	d long term health effects	Mitigations Medical treatme	nt/shore beer	nd follow we
Possibility of short an	d long term health effects	wiedicai treatme	nizsnore base	ed follow-up
Risk 9	Risk Category: Low		ALARP?:	Yes
Rank:	land outogoly.			
RECOMMENDATION	NS:			

COMPARTMENT	HPU room stbd		
NAME:			
LOCATION:	3 rd deck, stbd side,	inboard of warehouse	
DIMENSIONS: App	rox. 6.5m x 5.5m	MANNING:	None normally
POWER / FLUID / CO	NTROL LINES:		
480V power, Bulk air, rig ai	* & HP air piping. Dry bulk lines	s, fresh water lines, Hydraulic oil	tank and high pressure hydraulic piping.

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CONTROL SYSTEMS:							
Controls for HPU & HP air compressor.							
HVAC / DUCTING:							
Exhaust FD46, Supply FD4	1, Fire ∠one 16						
PASSIVE FIRE PROT	ECTION:						
Deck:	A-0			eckhead:	A-0		
Forward Bulkhead:	A-0			ft Bulkhead:			
Port Bulkhead:	A-0		-	tarboard	A-0		
			_ <u> </u>	ulkhead:	_		
Comments / Recomm	nendations						
FIRE/GAS DETECTION	NAI.						
FIRE/GAS DETECTION	Space	Du	ct			Space	Duct
Constant Manning	Space	Du		lydrocarbon	Detector(s)		
Flame Detector(s)				l ₂ S Detector(Ħ	
Heat Detector(s)				ther:		Ħ	
Smoke Detector(s)			j l				
Comments / Recomm	nendations						
ASH-172B26, ASH-172B29							
<u> </u>							
EIDE EIGHTING EOU	IDMENT:						
FIRE FIGHTING EQU	IPMENT:	Snace	Adjacer	nt		Snace	Adiacent
		Space	Adjacer		nguisher(s)	Space	Adjacent
Dry Powder Extinguish		Space	Adjacer		inguisher(s)	Space	Adjacent
		Space	Adjacer	CO ₂ Exti		Space	
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, S)	ner(s)	Space	Adjacer	CO ₂ Exti Foam Extinguis		Space	
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.)	ner(s)		Adjacer	CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s)		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon	ner(s)			CO ₂ Exti Foam Extinguis	sher(s) er Hose(s)	Space	
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe	ner(s) prinklers,		Adjacer	CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s)		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon	ner(s) prinklers,			CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s)		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe	ner(s) prinklers,			CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s)		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomm	ner(s) prinklers, nendations			CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s)		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments	ner(s) prinklers, nendations			CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomm	ner(s) prinklers, nendations			CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments / Recomments / Telephone	ner(s) prinklers, nendations ETC.:	CCTV	m	CO ₂ Exti Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments / Recomm	ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	CO ₂ Exti Foam Extinguis Fire Wat	PA Speaker Emergency		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments / Recomm	ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	CO ₂ Exti Foam Extinguis Fire Wat	PA Speaker Emergency		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments / Recomm	ner(s) prinklers, nendations ETC.:	CCTV Bilge Alai	m	CO ₂ Exti Foam Extinguis Fire Wat	PA Speaker Emergency		
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: _Fire axe Comments / Recomments / Recomm	ner(s) prinklers, nendations ETC.:	CCTV Bilge Alar	m Alam	CO ₂ Exti Foam Extinguis Fire Wat	PA Speaker Emergency Other:	Lighting	

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COMPARTMENT: H	IPU Room			
FIRE:	A THE STREET ASSOCIATION AND A STREET ASSOCIATION ASSO			
Ignition Sources / Fu	el	Preventions (No		
Electric wiring/short		Preventive maintenance and inspections		
Hydraulic fluid		Housekeeping		
^		88'4'4'	_	
Consequences		Mitigations	L 1111	
	to equipment/compartment	Firefighting capa	Dilities	
Possibility of injury to	personnei	Availability of me medivac	dicai treatmen	it including
Diele 0	Bioli Cotomoniu I au	Incuivac	AL ADDO:	V
Risk 9 Rank:	Risk Category: Low		ALARP?:	Yes
EXPLOSION:				<u>/</u>
Ignition Sources / Fu	el .	Preventions (No	te FX equipm	ent)
ignition sources / Fu		Fieventions (No	ne Ex equipiri	ent)
Consequences		Mitigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:				
FLOOD:		1		
Hazards		Preventions		
		Drains.		
Consequences		Mitigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:				
OTHER: Pressure, but	urns			
Hazards		Preventions		
Contact with live energy	gy sources/ breaks/ruptures in	PPE, energy isol	ation	
piping				
Contact with hot surfa	ces			
Consequences		Mitigations		
Possibility of injury to	personnel	Availability of me	edical treatmer	nt including
		medivac		
Risk 9	Risk Category: Low		ALARP?:	Yes
Rank:	NO. VIOLE TO THE PARTY OF THE P			- Administration of the second
DECOMMENDATION	ie.			

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Transoce	ean	MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON						APPENDIX III
	-							
COMPARTMENT NAME:	HVAC R	oom (Stb	d)					
LOCATION:	3 rd Deck	- Center A	Aft, Just	Forv	vard of ECR			
DIMENSIONS: 12m	X 9.2m				MANNING: As	Requi	red	
POWER / FLUID / CO		S:						
Powe120v, fresh water, pot v AHU-6 480V AC Power Pan								
CONTROL SYSTEMS	•		· · · · · · · · · · · · · · · · · · ·					_
CU-5 Compressor Panel AHU-6 Control Panel Fire Dampers (FD-73, FD-74 Supply Fan (SF-73)		FD-83, FD-8	35, FD-87	, FD-8	19)			
HVAC / DUCTING:			71		12.00.10			
Ventilation								
PASSIVE FIRE PROT	ECTION:							
Deck:	A-60			Dec	ckhead:	A-60		
Forward Bulkhead: Port Bulkhead:	A-60 A-60			Aft		A-60 A-60		
Port Buikileau.	A-00				khead:	A-00		
Comments / Recomm	endations		_					
FIRE/GAS DETECTIO	N:					• • • • • • • • • • • • • • • • • • • •		
	Space	Du	ıct			T	Space	Duct
Constant Manning			_		drocarbon Detector	(s)		
Flame Detector(s)					S Detector(s)			
Heat Detector(s)			╡	Oth	ier:	-	Ш	
Smoke Detector(s) Comments / Recomm	K							
Smoke Detectors ASH-1727		23						
FIRE FIGHTING EQUI	DMENT.			_				
FIRE FIGHTING EQUI	PIVIEIV I :	Space	Adja	cent			Space	Adjacent
Dry Powder Extinguish	er(s)]	CO ₂ Extinguisher	(s)		
H ₂ O Extinguisher(s)	(-)			j	Foam	(-)	Ï	
. , ,		_	_		Extinguisher(s)		_	
Fixed H ₂ O (Deluge, Sp	orinklers,				Fire Water Hose(s)		
etc.)				=: 105				
Fixed Halon Other:		H		1	Fixed CO ₂			
Comments / Recomm CO2 Extinguisher #116	nendations		<u> </u>	J				
L								
DEVIOLON NO	04						• • • •	
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APPENDIX	II
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COMMUNICATI	ONS, ETC. :						
Telephone		CCTV		PA Speaker	\boxtimes		
Fire Alarm Butto	n 🗌	☐ Bilge Alarm		Emergency Lighting	\boxtimes		
GA Alarm Buttor		General Alarm	\boxtimes	Other:			
	commendations						
Fire Alarm Button #X	Fire Alarm Button #XS-172524 in Passageway						
FOOADE DO	ESSARE BALITES						
	ESCAPE ROUTES:						
Door aft into 480V S	Door to port into passageway Door aft into 480V Switchgear Room						
COMPARTMENT: HVAC Room (Stbd) FIRE:							
Ignition Source	s / Fuel		Preventions	(Note EX equipment)			
Electric wiring/sh			Preventive m	naintenance and inspections			
	01.0		Proper storage	ge of flammable materials			
				g :			
Consequences			Mitigations				
Possibility of dar	nage to equipme	nt/compartment	Firefighting of				
				f medical treatment including			
			medivac				
Risk 9	Risk Cate	gory: Low		ALARP?: Yes			
Rank:							
EXPLOSION:							
Ignition Source	s / Fuel		Preventions	(Note EX equipment)			
Canagarianasa			Mitigations				
Consequences			wiitigations				
Risk	Risk Cate	gory:		ALARP?: Yes / No			
Rank:							
FLOOD:							
Hazards			Preventions				
			Drains.				
Consequences			Mitigations				
20110044011000							
Risk	Risk Cate	egory:		ALARP?: Yes / No			
Rank:							
OTHER: Electri	c, hot surfaces						
Hazards			Preventions				

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Contact with live ener Contact with hot surfa	0,7	PPE, PTW, energy isolation Preventive maintenance and inspections		
Consequences		Mitigations		
Possibility of injury to personnel Possibility of fatality		Availability of medical treatment including medivac Availability of high voltage PPE		
Risk 15 Rank:	Risk Category: Medium	ALARP?: Yes		
RECOMMENDATION	is:			
Consider providing high voltage PPE for this space. Also consider the placement of a sigh detailing steps to take in an electrical shock situation. Consider the installation of an approved flammables storage locker for this space.				

COMPARTMENT	Laundry and	d escape pas	sage			
NAME:						
LOCATION:	2 nd Deck Ac	commodation				
DIMENSIONS: 13m X 6	3.5m and 7m 2	X 2.5m	MANNING:	Always		
POWER / FLUID / CONT	ROL LINES:					
120V Outlet and Lighting Cables						_
Potable Water Lines						
Power cables for washers and d	ryers					
Power and control cables						
CONTROL SYSTEMS:						
Cold Water Loop Isolation Valve	s (DP-13, DP-14,	& DP-15)				
Hot Water Loop Isolation Valves	(DH-14, DH-15,	& DH-16)				
Sprinkler Test/Drain Valve (2 nd S	itbd)					
Control for Exhaust Fan (EF-118	3)					
LINAS A PLICTING						
HVAC / DUCTING:						
HVAC Ventilation Ducting						
PASSIVE FIRE PROTEC	TION:					
Deck: A			Deckhead:	A-0		
Forward Bulkhead: B-	•		Aft Bulkhead:	B-0		
Port Bulkhead: B	•		Starboard	B-0		
Port Bulkilead. B	-0			D-U		
 			Bulkhead:			
Comments / Recommen	aations					
FIRE/GAS DETECTION:						
	Space	Duct			Space	Duct
Constant Manning	\boxtimes		Hydrocarbon Dete	ector(s)		
Flame Detector(s)			H ₂ S Detector(s)	` ,		
Heat Detector(s)			Other:			
Smoke Detector(s)	$\overline{\boxtimes}$				_	_
Comments / Recommendations						
Smoke Detector #ASH-172415						
Fire in Escape Passage can be	detected by detec	tors in Rooms 20	86, 237, & 238			

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APPENDIX	111

FIRE FIGHTING EQU	JIPMENT:								
Dry Powder Extinguis H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, S		Space	Adjace	ent	Foam Extinguis	nguisher(sher(s) er Hose(s		Space	Adjace
etc.)	prinkiers,				riie vvai	ci nose(s	"	Ш	
Fixed Halon		Ιп			Fixed CO) ₂		П	
Other:						- 2			l
Comments / Recomi	mendations								
Fire Stations #18 & 19 in pa Emergency Stop for washe		assageway							
COMMUNICATIONS	ETC. :								
Telephone		CCTV				PA Spea			\boxtimes
Fire Alarm Button		Bilge Alai				Emerge	ncy L	_ighting	\boxtimes
GA Alarm Button		General A	Alarm		\square	Other:			
Comments / Recomi	mendations								
ESCAPE ROUTES:									
Primary: Exit forward through	nh door into nassa	neway then	forward to F	Fwd	Lifeboat De	ck			
Alternate: Exit Port Aft thro									
COMPARTMENT:	aundry and es	cape pas	sage						
FIRE:	_aanary and es	oupo pas	Jugo						
Ignition Sources / Fu	uel			Pre	eventions	(Note F)	(ear	iipment)	
Electrical wining/short				Preventions (Note EX equipment) Preventive maintenance and inspections					
Heat from dryers, lint									0.10
Oily/greasy clothing				Lint filters cleaned 2-3 times per day Special care taken with oily/greasy clothing-					
, , , , , , , , , , , , ,				(prewash)					
Consequences	_				igations				
Possibility of damage		compartm	ent			apabilitie			
Possibility of injury to personnel					ailability o Itiple drye	f medical ers	treat	ment	
Risk 9 Rank:	Risk Catego	ry: Low				ALA	RP?	: Yes	
EXPLOSION:									
Ignition Sources / Fi	uel			Pre	eventions	(Note E)	< eqι	uipment)	
000000000000000000000000000000000000000	_			NA:4	tiantia			_	
Consequences				1411	igations				
Diah	Dial October					A1 4	\ DD'	Di Van II	Na
Risk Rank:	Risk Catego	ıy:				ALA	ARP?	?: Yes /	
FLOOD:									
Hazards				Pre	eventions	3			
				Dra	ains.				
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Consequences

MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

Mitigations

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Risk Rank:	R	isk Category	:		ALARP	?: Yes/N	lo		
OTHER: Electric	cal shock	ζ							
Hazards	311001			Preventions					
Contact with live	onormu	FOURCOE		PTW, energy is	olation DI	DE			
Contact with hive	energy	sources		Preventive mair			ons		
Consequences			1	Mitigations					
Possibility of inju Possibility of fata		sonnel			lity of medical treatment including				
Risk 15 Rank:	R	isk Category	: Medium		ALARP	?: Yes			
RECOMMENDA	TIONS:								
							,		
COMPARTMEN NAME: LOCATION:	т	Machine S		Frame 9.2 to 13.2					
DIMENSIONS:	20.71.4	22.5' x 11.5'	eck, Puit Side,	MANNING:					
				MANNING:	<u> 1</u>				
POWER / FLUID 120v, 480v, diesel, ri		ROL LINES:							
CONTROL SYS	TEMS:				411.1				
None	<u>, , , , , , , , , , , , , , , , , , , </u>			<u>-</u>					
HVAC / DUCTIN	G:								
Weld Shop (2937cfm linked fire damper.), Client S	tores (1469cfm),	npressor Room wit Electrical Shop (2	th fusible linked fire dan 480cfm) and Rig Air Co	nper and Su mpressor Ro	pply vent (1175 oom (2937cfm)	ofm) routed to with fusible		
PASSIVE FIRE I	PROTEC	TION:							
Deck:	C			Deckhead:	C/A	-0/A-60			
Forward Bulkhea				Aft Bulkhead:	A-0				
Port Bulkhead: ——————				Starboard Bulkhead:	A-0				
Comments / Red									
penetration does not Deckhead is rated A-	seal. Sho 60 under F	uld be re-classed aint Locker, A-0	C.	are open cableways, op enerator and C for the r		nd doorframe a	nd monorail		
FIRE/GAS DETE	CTION:	·							
Constant Mannin Flame Detector(s Heat Detector(s)		Space	Duct	Hydrocarbon Def H ₂ S Detector(s) Other:	tector(s)	Space	Duct		

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Smoke Detector(s)	ı	\boxtimes	<u> </u>						1
Comments / Recomm	endati								
FIRE FIGHTING EQUI	PMENT	r:							
Day Bourder Extinguish	05/6)		Space	Adjacent			(-)	Space	Adjacent
Dry Powder Extinguish H ₂ O Extinguisher(s)	er(s)				Foam Extinguis	inguisher(sher(s)	(S)		
Fixed H₂O (Deluge, Sp etc.)	rinklers	,				er Hose(s	5)		
Fixed Halon				_	Fixed Co	O_2			
Other: Fusible link in ex Comments / Recomm									
Dry powder extinguisher is in Engine Room outside Weldir	Passage		utside Mecha	nic Shop/Port	Auxiliary Mac	hinery Roor	m. CC	2 extinguishe	er is in #1
COMMUNICATIONS,			·						
Telephone			CCTV			PA Spe	aker		\boxtimes
Fire Alarm Button	į		Bilge Alar			Emerge		_ighting	\boxtimes
GA Alarm Button Comments / Recomm			General A	Alam	🗓	Other: _			🗆
ESCAPE ROUTES: Primary: stbd into Port Auxili. Alternate: fwd into Mechanic Alternate: aft into Welding Si	Shop, sti	bd into	Passageway,	, up stairs to r	nain deck.				
COMPARTMENT: N	/lachine	Shop)				_		
FIRE:									
Ignition Sources / Fu		o from	adadina		reventions reventive n				
Electrical winng/shorts /machining, Flammable					lousekeepii				s are seal
Spontaneous combust					elded at jo				
trash					roper dispo	sal of oily	rags	s/oily cuttin	gs
Consequences			 		litigations				
Possibility of damage t Possibility of injury to p			compartm	ent F A	irefighting o vailability o	capabilitie f medical	s treat	ment	
Risk 9 Rank:	Risk C	atego	ory: Low			ALA	ARP?	Yes	
EXPLOSION:									
Ignition Sources / Fu	el			P	reventions	(Note E	X equ	uipment)	
Consequences				N	litigations				
					_				
								-	
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Risk	Risk Category:	A	LARP?: Yes /	No		
Rank: FLOOD:						
Hazards		Preventions				
Hazards		Preventions				
Consequences		Mitigations				
Risk	Risk	A	LARP?: Yes /	No		
Rank:	Category:					
OTHER: Electrical s	hock					
Hazards		Preventions				
Contact with live ene	rgy sources	PTW, energy isolati Preventive mainten		tions		
Consequences		Mitigations				
Possibility of injury to	personnel	Availability of medic	al treatment incl	uding		
Possibility of fatality		medivac				
Risk 15 Rank:	Risk Category: Medium	A	LARP?: Yes			
RECOMMENDATION						
	tion of an approved flammables s		space. Also cons	ider the		
provision of an oily w	aste disposal container for this sp	pace.				
COMPARTMENT NAME:	Main Deck, Port Aft					
LOCATION:	Main Deck, Port Aft					
	75m x 30.5m	MANNING: A	s required			
POWER / FLUID / CO			o roquirou			
	wash down, mud lines, fire water					
Oxy-acetylene bottle stora						
				,		
CONTROL SYSTEM	<u>. </u>					
Well test equip, junction bo						
E-stop for gantry crane	F&G Junction box					
Pressure washer Shoreline conn. Box Solvent recovery system Radio Comm Junc. Box						
Switches for 480V receptacles Sea water Junc. box						
HVAC / DUCTING:						
Vents for the liquid storage tanks (fuel, oil, mud, ballast) Supply and Exhaust for Machinery spaces						
PASSIVE FIRE PROTECTION:						
Deck:	A-60	Deckhead:	N/A			
Forward Bulkhead:	N/A	Aft Bulkhead:	N/A			
Port Bulkhead:	N/A	Starboard	N/A			
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APPENDIX III

			1	Bul	khead:			ı
Comments / Recomme	ndations							
								ľ
FIRE/GAS DETECTION								
	Space	Dı	ıct				Space	Duct
Constant Manning		_	_			Detector(s)	\boxtimes	
Flame Detector(s)			<u> </u>		Detector) 🗆 j
Heat Detector(s)			-	Oth	Other:			
Smoke Detector(s) Comments / Recomme		L						
Comments / Recomme	naations							
								ľ
FIRE FIGHTING EQUIP	MENT:							
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher	(s)		1 "		CO ₂ Exti	inguisher(s)		\boxtimes
H ₂ O Extinguisher(s)					Foam	.,		🗇
					Extinguis			
Fixed H₂O (Deluge, Sprir	iklers,				Fire Wat	er Hose(s)		
etc.)								
Fixed Halon]	_		Fixed Co	O_2		f 1
Other: Comments / Recommen	adations							
Comments / Recomme	luations							
COMMUNICATIONS, ET	·C							
Telephone	<u> </u>	CCTV				PA Speaker		
Fire Alarm Button 🔲 Bilge Alarm				☐ Emergency Lighting ☒			⊠ l	
GA Alarm Button 🗵 General Alarm				Other:				
Comments / Recomme	ndations							
Nearest Phones – CO2 F	Room, Mud	Lab, Shal	ker hous	e, S	bd crane	pedestal.		
FOOADE DOUBED								
ESCAPE ROUTES:	for							
Perimeter Walkway leadi	ng torward	and an.						
COMPARTMENT. Mai	n Dook Do	-t A#						
	n Deck, Po	nt Alt						
FIRE:				Dr	oventions	(Note EV ear	uinmont)	
Ignition Sources / Fuel			Preventions (Note EX equipment) Policy for inspection /installation of client and					
Possibility of fire from any temporary third party or rental equipment fitted with electric power /diesel fuel			subcontractor equipment					
systems. Electric wiring/shorts/fuel leaks			Housekeeping					
Oxygen/gas cylinders, oil tote tanks			ESD's required on same equipment					
Consequences				Mitigations				
Damage to specific unit			Firefighting capabilities					
Possibility of injury to personnel			Availability of medical treatment including					
, ,				me	edivac			
	isk Catego	ory: Low				ALARP?	?: Yes	
Rank:								
EXPLOSION:								
ignition Sources / Fuel	Ignition Sources / Fuel Preventions (Note EX equipment)							

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0		Mitigations		
Consequences		Willigations		
		1		
		1		
Risk	Risk Category:		ALARP?:	Ves / No
Rank:	Risk Calegory:		ALAKI :.	1037110
FLOOD:				
Hazards		Preventions		
		Drains.		
Consequences		Mitigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:	Misk outegory.		7127111111	1007110
OTHER:				
Hazards		Preventions		
Consequences		Mitigations		
Consequences		- Intigations		
Risk	Risk Category:		ALARP?:	Yes / No
Rank:				
RECOMMENDATIO	NS:			
	TAXABLE TAXABL			

COMPARTMENT	Main Deck, Port Fwd				
NAME:					
LOCATION:	Main Deck, Port Fwd				
DIMENSIONS:	40.75m x 30.5m	MANNING:	As required		
POWER / FLUID	/ CONTROL LINES:				
Loading station with piping for fuel, base oil, waste oil and synthetic base mud. Storage tanks for BOP fluids aft. Helifuel tanks and piping port side. Rig air, drill water, high pressure water. Welding outlets, 480V and 120V outlets. Various equipment and tote tanks in different areas at any given time. Occasional storage of nitrogen bottles.					

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ADDENDIV	111
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CONTROL SYSTEMS:								
Controls for Helifuel and helifoam, moonpool and shakerhouse deluge, high pressure wash pump and waste oil pump.								
10/10/01/07/01								
HVAC / DUCTING:			: 			1 1-1: '6 - 6		
The space is located outside, th	erefore we m	ust be consc	ious of o	ur nea	aing ana win	d relation if a fire	should arise.	
PASSIVE FIRE PROTEC	TION:							
Deck: A	-60			Dec	khead:			
Forward Bulkhead:				Aft I	Bulkhead:			
Port Bulkhead:					rboard			
				Bull	khead:			
Comments / Recommen	ations							
FIRE/GAS DETECTION:								
FIRE/GAS DETECTION:	Space	Du	ct	1			Space	Duct
Constant Manning		Du	Ci	Hydrocarbon Detector(s)			Space ⊠	
Flame Detector(s)			٦ .		Detector(\boxtimes	
Heat Detector(s)	l H	F	า์	Other:			Ä	
Smoke Detector(s)			j	<u> </u>				
Comments / Recommen	dations		_					
FIRE FIGHTING EQUIPM	IENT:							
THE FIGURE EQUILITY	<u></u>	Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(s)) <u> </u>]	CO ₂ Exti	nguisher(s)		
H₂O Extinguisher(s)]	Foam			
		l			Extinguis		_	_
Fixed H ₂ O (Deluge, Sprin	klers,	' □.			Fire Wat	er Hose(s)	\boxtimes	
etc.)					Fired 00			
Fixed Halon Other: Fire Team and HL	O lookoro		_r _	1	Fixed CC) ₂		
Comments / Recommen			L	J				
Fire stations #4, 6, 7 & 8.	dutions							
COMMUNICATIONS, ET	C. :		_	_				
Telephone	\boxtimes	CCTV			\boxtimes	PA Speaker		\boxtimes
Fire Alarm Button		Bilge Alar				Emergency	Lighting	\boxtimes
GA Alarm Button						Other:		
	<u> </u>	Comments / Recommendations						
Comments / Recommen		C-1						
		l elevator t	trunk					
Comments / Recommen		l elevator t	trunk	_				

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COMPARTMENT:	Main Deck, Port Fwd						
FIRE:							
Ignition Sources / Fo		Preventions (Note EX equipment)					
	any temporary third party or d with electric power /diesel fuel ng/shorts/fuel leaks	Policy for inspection /installation of client and subcontractor equipment Housekeeping					
Oxygen/gas cylinders		ESD's required o	n same equ	ipment			
Consequences	,	Mitigations					
Damage to specific un Possibility of injury to	Firefighting capabilities Availability of medical treatment including medivac						
Risk 9 Rank:	Risk Category: Low		ALARP?:	Yes			
EXPLOSION:							
Ignition Sources / Fi	uel	Preventions (No	te EX equip	ment)			
Consequences		Mitigations					
Risk Rank:	Risk Category:		ALARP?:	Yes / No			
FLOOD:							
Hazards		Preventions					
		Drains.					
Consequences		Mitigations					
Risk Rank:	Risk Category:		ALARP?:	Yes / No			
OTHER: Pressure							
Hazards		Droventions					
	ored pressure from APV bottles,	Preventions Preventive maintenance and inspections					
piping	Preventive maintenance and inspections Care in handling equipment/lifts around APV's PPE, PTW, energy isolation, relief valves on equip.						
Consequences		Mitigations					
Possibility of injury to Possibility of fatality	personnel	Availability of me medivac	dical treatm	ent including			
Risk 15	Risk Category: Medium		ALARP?:	Yes			
Rank:			~E/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	, 00			
RECOMMENDATION			ALANI II				

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Transoce	an	RIS	K ASS	ESS	HAZARD MENT DRIZON			APPENDIX III
COMPARTMENT NAME:	Main De	ck, Stbd A	ıft					
LOCATION:	Main De	ck, Stbd A	ff					
	m x 30.5m	on, orba /			MANNING: As re	equire	ed	
POWER / FLUID / CON		S:						
120v, 480v, rig air, high press	ure washdown,	mud vac, fir	e water					
CONTROL SYSTEMS:								
Controls for mud vac E-stop for gantry crane Pressure washer Solvent recovery system								
Switches for 480V receptacles HVAC / DUCTING:	<u> </u>							
Vents for the liquid storage tar	nks (fuel, oil, mu	d, ballast)						
Supply and Exhaust for Machi								
PASSIVE FIRE PROTE								
Deck: A-60 Deckhead: N/A								
Forward Bulkhead: N/A Aft Bulkhead: N/A Port Bulkhead: N/A Starboard N/A								
Port Bulkhead:	N/A				chead:	14//		
Comments / Recomme	endations		_					
Area is also used for temporal S/A corner of space contains	ry storage of liqu	uid totes, wh and a dedica	ich may o ated area	for sto	not contain flammable li orage of hazardous mate	iquids erials.		
FIRE/GAS DETECTION	l:							
	Space	Du	ıct	l			Space	Duct
Constant Manning		1 -	٦		rocarbon Detector(s)	\boxtimes	
Flame Detector(s) Heat Detector(s)			╡	H ₂ S Detector(s) Other:			Ħ	
Smoke Detector(s)			i	0	···	-	ш	
Comments / Recomme	endations							<u> </u>
FIRE FIGHTING EQUIP	MENT.							
THE TOTTING EQUI		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguishe	er(s)]	CO ₂ Extinguisher((s)		
H ₂ O Extinguisher(s)]	Foam		\Box	
Fixed II O /Dalues Ora	inklore				Extinguisher(s) Fire Water Hose(s)	,	\boxtimes	
Fixed H ₂ O (Deluge, Spr etc.)	iiikieis,				ine vvalei mose(s	"		
Fixed Halon					Fixed CO ₂			
Other:]				
Comments / Recomme	endations							
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appendix II

COMMUNICATIONS	ETC.:						
Telephone		CCTV			PA Speaker		
Fire Alarm Button	\boxtimes	Bilge Alam			Emergency Lighting		
GA Alarm Button		General Alarm		\boxtimes	Other:		
Comments / Recomments							
Nearest Phones - CC	D2 Room, Mud	Lab, Shaker hous	e, Stbd (crane i	pedestal.		
ESCAPE ROUTES:							
Perimeter Walkway le	eading forward	anα aπ.					
COMPARTMENT:	Main Deck, St	od Aft					
FIRE:			_	_			
Ignition Sources / Fu					(Note EX equipment)		
Possibility of fire from					pection /installation of client and		
rental equipment fitted	d with electric	power /diesel fuel			r equipment		
systems. Electric winn	ng/shorts/fuel l	eaks	House				
Oxygen/gas cylinders	, oil tote tanks				ed on same equipment		
Consequences	ni4		Mitiga		an chilities		
Damage to specific unit Possibility of injury to personnel			Availal mediva	bility of	apabilities f medical treatment including		
Risk 9 Rank:	Risk Catego	ory: Low			ALARP?: Yes		
EXPLOSION:			_				
Ignition Sources / Fu	uel		Preventions (Note EX equipment)				
Consequences			Mitiga	tions			
Risk Rank:	Risk Catego	ory:			ALARP?: Yes / No		
FLOOD:				. 4			
Hazards			Prever Drains		<u> </u>		
			Drains				
Consequences			Mitigations				
Risk	Risk Catego	ory:			ALARP?: Yes / No		
Rank:							
OTHER:							
Hazards			Prever	ntions			

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9	DICK ACC	DENT HAZARD SESSMENT	APPENDIX III
I Transocea	DEEPWATI	ER HORIZON	
			<u> </u>
Consequences	•	Mitigations	
Risk Ri	sk Category:		ALARP?: Yes / No
Rank:	sk Calegory.		ALANFI. 1657 NO
RECOMMENDATIONS:			
COMPARTMENT	Main Dook Othel Fund		
COMPARTMENT NAME:	Main Deck, Stbd Fwd		
LOCATION:	Main Deck, Stbd Fwd		
DIMENSIONS: 40.75m	x 30.5m	MANNING:	As required
POWER / FLUID / CONT	ROL LINES:		
120v, Loading station with piping		ase mud. And Waste oil	tanks on aft bulk head, Oil tote tanks stbd

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		MAJOR ACCIDENT HAZARD				APPENDIX I			
Transoce	an		SK ASSI						
, II al 10000		DEE	PWATE	K H	DRIZON				_
H ₂ O Extinguisher(s)		ΙП	ΙП		Foam			П	Ι П
1120 Extinguismon(o)] _		Extinguis	her(s)			-
Fixed H ₂ O (Deluge, Spri	inklers,				Fire Wate	r Hose(s)	\boxtimes	
etc.)					·				
Fixed Halon					Fixed CO	2			
	Other: Commendations								
Comments / Necomme	iluations								
COMMUNICATIONS, E	TC.:								
Telephone		CCTV				PA Spe			\boxtimes
Fire Alarm Button		Bilge Alar				Emerge	ncy l	_ighting	
GA Alarm Button		General A	\larm _			Other:			
Comments / Recomme									
Emergency Strobe lights	s on stod two	delevator							
ESCAPE ROUTES:									
Take ladder way to fwd I	lifeboat deck	c, or go aft	to aft life	eboa	at deck				
					<u>-</u>				
	in Deck, Stb	od Fwd							
FIRE:									
Ignition Sources / Fuel					eventions				
Possibility of fire from ar				Policy for inspection /installation of client and subcontractor equipment					
rental equipment fitted w systems. Electric winng/			sei ruei	Housekeeping					
		eaks		ESD's required on same equipment					
Consequences	Oxygen/gas cylinders, oil tote tanks				tigations	u on sa	ille c	quipinent	
Damage to specific unit					efighting ca	anabilitie			
Possibility of injury to pe	ersonnel				ailability of			ment inclu	idina
					edivac				
	Risk Catego	ry: Low				ALA	ARP?	': Yes	
Rank: EXPLOSION:									
Ignition Sources / Fuel				Dr	eventions	(Note F	Y ACI	iinment)	
ignition obdites / def					SVEIIUUIIS	(NOTO L.	n ogi	притопц	
Consequences				Mi	tigations				
Risk	Risk Catego	rv:				AL	ARP	?: Yes/	No
Rank:		•							
FLOOD:									
Hazards					eventions				
				Dra	ains.				
Consequences				Mit	tigations				
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APPENDIX III

Risk Rank:	Risk Category:	ALARP?: Yes / No				
OTHER:		The state of the s				
Hazards		Preventions				
Sudden release of sto piping	red pressure from APV bottles,	Preventive maintenance and inspections Care in handling equipment/lifts around APV's PPE, PTW, energy isolation, relief valves on equip.				
Consequences		Mitigations				
Possibility of injury to Possibility of fatality	personnel	Availability of medical treatment including medivac				
Risk 15 Rank:	Risk Category: Medium	ALARP7: Yes				
RECOMMENDATIONS:						

COMPARTMENT	MCC Room, port			
NAME:				
LOCATION:	3 rd deck, aft of mud pum		<u> </u>	
	prox. 12m x 8m	MANNING:	0	
POWER / FLUID / CO	ONTROL LINES:			
120v, 208v, 480v, fire	e water			
Breaker units				
		The state of the s	- WHIELD	
CONTROL SYSTEM				
MCC1 P/A drilling, MCC6 service #1, Fuel oil service	P/A Ventilation, MCC12 P/A equipment	i, Rig air compressor #1, n	nain UPS distribution bo	ard, Lube oil
CO2 control for 600V swite				
HVAC / DUCTING:				
	n ducting, FD 84 A/C return.			
Fire zone 27	in ducting, FD 64 A/C return.			
PASSIVE FIRE PRO	TECTION:			
Deck:	A-0	Deckhead:	A-0	
Forward Bulkhead:	A-60	Aft Bulkhead:	A-0	
Port Bulkhead:	A-0	Starboard	A-60	
		Bulkhead:		
Comments / Recom		5		
Boundaries: Aft-Transforr	ner room, Fwd- Mud pump room, port-	Engine room #3, stba- MC	C room	
FIRE/GAS DETECT				
	Space Duct		Space	Duct
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		MAJOR ACCIDENT HAZARD RISK ASSESSMENT					APPENDIX III		
Transoc	ean	DEEPWATER HORIZON						_	
Constant Manning Flame Detector(s) Heat Detector(s)]	Hyc H₂S	Hydrocarbon Detector(s) H ₂ S Detector(s) Other:				
Smoke Detector(s)			i l	• (1)	o		-		
Comments / Recomm	nendations								
ASH 172906 ASH 172907	T. SECRETOR AND AND AND AND AND AND AND AND AND AND				_				
FIRE FIGHTING EQU	IPMENT:				T .			0	Adinasat
Dry Powder Extinguish H ₂ O Extinguisher(s)	her(s)	Space	Adjac	ent	CO ₂ Ext Foam Extingui	inguisher((s)	Space	Adjacent
Fixed H ₂ O (Deluge, S etc.)	prinklers,					ter Hose(s	5)		\boxtimes
Fixed Halon Other:					Fixed Co	O_2			
Comments / Recomm	nendations								
001111111017									
COMMUNICATIONS,		CCTV			<u> </u>	DA Cno	akar		
Telephone Fire Alarm Button	\boxtimes	CCTV Bilge Alar	m		H	PA Spe Emerge			\boxtimes
GA Alarm Button General Alarm					Ħ	Other:	ilo y	Lighting	
Comments / Recommendations						-			-
FOCARE POLITEO									
ESCAPE ROUTES: Go out to the stbd doo	er un staire ta	2 nd dook E	=vit out	thro	oh ECD	o off book	doo	L	
Go out to the sibu dot	n, up stalls to	Z deck, i	EXIL OUL	uno	ugii ECR	io ali boa	uec	n. 	
COMPARTMENT:	MCC Room, P	ort						W + - 1	
FIRE:									
Ignition Sources / Fu	ıel			Preventions (Note EX equipment)					
Electric wiring/ shorts				Preventive maintenance and inspections					
Consequences				Mi	tigations				
Possibility of damage	to equipment/	compartme	ent	Firefighting capabilities					
Possibility of injury to	personnel	·		Availability of medical treatment including medivac					
Risk 9 Rank:	Risk Category: Low AL					ALA	ARP?	?: Yes	
EXPLOSION:									
Ignition Sources / Fu	iel			Preventions (Note EX equipment)					
Consequences			Mitigations						
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Risk		Risk Category:		ALARP?:	Yes / No
Rank:					1007110
FLOOD:					_ .
Hazards			Preventions		
			Drains.		
Consequences	I		Mitigations		
Risk		Risk Category:		ALARP?:	Yes / No
Rank:					
OTHER: Electr	ic shoc	ck			
Hazards			Preventions		
Contact with live	e energ	gy sources	Preventive main PPE, PTW, ener		inspections
Consequences			Mitigations		
Possibility of inju		personnel	Availability of hig	h voltage PF	E
Possibility of fat			Availability of medivac		
Risk 15 Rank:	5	Risk Category: Medium		ALARP?:	Yes
RECOMMENDA	ATION:	S:			
Consider provid	ing hig	h voltage PPE for this space. A	Iso consider placer	ment of a sig	n detailing the step
to take in electri			•	3	J J

COMPARTMENT	Mechanic's shop			
NAME:	•			
LOCATION:	2 nd Deck Port amidships			
DIMENSIONS: 6.02n	n x 5.02m	MANNING:	Intermittent	
POWER / FLUID / CON	ITROL LINES:			
120V Outlet and Lighting Cab	les			
Bulk lines, rig air, base oil				
8				
CONTROL SYSTEMS:				
ASH 172501,				
Zone #15 air and fan & PAC s	stop			
FP clse in zones 15/19				
HVAC / DUCTING:				-
Fire dampers 30, 31, 75, 76				

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PASSIVE FIRE PRO	TECTION:								
Deck:	A-0		Ī	Dec	khead:		A-0		
Forward Bulkhead:	A-60			Aft Bulkhead: A-0					
Port Bulkhead:	A-0			Starboard A-0					
				Bull	khead:				
Comments / Recom	mendations								
FIRE/GAS DETECTION									
	Space	Du	ict					Space	Duct
Constant Manning			٦		Irocarbon		(S)	님	
Flame Detector(s)			╡		Detector(H	
Heat Detector(s)		<u> </u>	-	Oth	er:		-	Ш	
Smoke Detector(s) Comments / Recom	\								
Smoke Detector #ASH-172									
Fire in Escape Passage ca		detectors in F	Rooms 23	6, 237	', & 238				
FIRE FIGHTING EQU	JIPMENT:								
		Space	Adjac	ent				Space	Adjacent
Dry Powder Extinguis	sher(s)		⊠			nguisher	(s)		
H ₂ O Extinguisher(s)		📙			Foam				
Fixed LL O (Delicer of	andald				Extinguis		-1		🔼
Fixed H ₂ O (Deluge, S	prinkiers,				rire vvat	er Hose(s	5)	凵	
etc.) Fixed Halon					Fixed CO	٦.			
Other:					1 IXEG CC	J ₂			
Comments / Recommendations									
COMMUNICATIONS	, ETC. :								
Telephone	\boxtimes	CCTV				PA Spe			\boxtimes
Fire Alarm Button		Bilge Alaı			Emergency Lighting				
GA Alarm Button		General A	Alarm			Other:			
Comments / Recom	mendations								
ESCAPE ROUTES:									
Door to passageway	and up stairs to	o main dec	ck or for	ward	l through a	accommo	datio	ns to lifebo	at deck
Also through machine	shop to aft sta	airwell	-1. 0						
	•								
COMPARTMENT:	Mechanic's Sh	<u> </u>							
FIRE:	WICCHEI IIC 3 OII	<u>v</u> Р	····						
Ignition Sources / F	uel			Pr	eventions	(Note F	X ear	uioment)	
Electric wiring/shorts				Preventions (Note EX equipment) Preventive maintenance and inspections					
Class A material					Housekeeping				
1 Todockooping									
Consequences Mitigations									
Possibility of damage to equipment/compartment				Firefighting capabilities					
						f medical	treat	tment inclu	ding
medivac									
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Risk 9 Rank:	Risk Category: Low	ALARP?: Yes
EXPLOSION:		
Ignition Sources /	Fuel	Preventions (Note EX equipment)
		,
Consequences		Mitigations
Risk	Risk Category:	ALARP?: Yes / No
Rank: FLOOD:		
Hazards		Preventions
nazaius		Lievelinous
Consequences		Mitigations
Risk Rank:	Risk Category:	ALARP?: Yes / No
OTHER:		
Hazards		Preventions
Consequences		Mitigations
Risk Rank:	Risk Category:	ALARP?: Yes / No
RECOMMENDATI	ONS:	

COMPARTMENT	Mess Room
NAME:	
LOCATION:	2 nd deck, accommodation block, stbd of centerline.

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DIMENSIONS: App	rox. 12.5m x 8	m		Т	MANNIN	IG : 0-10	00		
POWER / FLUID / CO									
Numerous 120V outlets, Po	otable water.								
	,								
CONTROL SYSTEMS									
Lights, beverage dispenser	s, food warmers.								
HVAC / DUCTING:									
Fire zone F-10,									
PASSIVE FIRE PRO		<u> </u>							
Deck:	A				khead:		A 20		
Forward Bulkhead: Port Bulkhead:	A-0 B-30		1		Bulkhead: board		B-30 A-0		
FUIL DUIKITEAU.	D-30		I .		head:		A-0		
Comments / Recom	mendations			Jan					
FIRE/GAS DETECTION	ON:								
	Space	Du	ict					Space	Duct
Constant Manning		_			rocarbon		(s)		
Flame Detector(s)					Detector			닏	
Heat Detector(s)		Ļ	╡	Othe	er:		-	Ш	
Smoke Detector(s) Comments / Recom	mendations				_				
Comments / Necom	inchaations								
FIRE FIGHTING EQU	JIPMENT:	0	A 45				_	<u>C</u>	Adiagona
Dry Powder Extinguis	hor(e)	Space	Adjace	ent	CO. Evi	nguisher	(c)	Space	Adjacent
H ₂ O Extinguisher(s)	1161(S)	l H		- 1	Foam	nguisnen	(3)	ĺΗ	1
1120 Extinguisher(s)					Extinguis	sher(s)			
Fixed H ₂ O (Deluge, S	prinklers,			Fire Water Hose(s)			s)		
etc.)						•			
Fixed Halon					Fixed CO	O_2			
Other: _Fire Axe			\boxtimes						
Comments / Recomments / Recomme									
und Galety Control pla	posted in space.								
COMMUNICATIONS	, ETC. :								
Telephone	<u> </u>	CCTV		_		PA Spe	aker		
Fire Alarm Button		Bilge Ala				Emerge	ncy l		\boxtimes
GA Alam Button		General /	Alam			Other:	Alam	n light tree	
Comments / Recom	mendations								
ESCAPE ROUTES:									
Out portside door and then	forward and out d	oor to Lifebo	at deck.						
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COMPARTMENT:	Mess Room				
FIRE:					
Ignition Sources / F	uel	Preventions (N	ote EX equipment)		
Electric wiring/shorts			tenance and inspections		
Class A material		Housekeeping			
Consequences		Mitigations			
	to equipment/compartment	Firefighting capa	abilities		
Possibility of injury to	personnel	Availability of me	edical treatment including		
		medivac			
Risk 9	Risk Category: Low		ALARP?: Yes		
Rank:					
EXPLOSION:					
Ignition Sources / F	uel	Preventions (N	ote EX equipment)		
Consequences		Mitigations			
Risk	Risk Category:		ALARP?: Yes/No		
Rank:	Risk Category.		ALARP?: Yes7No		
FLOOD:					
Hazards	- · · · · ·	Preventions			
TIAZATUS		Drains.			
		Diams.			
Consequences		Mitigations			
Risk	Risk Category:		ALARP?: Yes / No		
Rank:					
OTHER: Electric Sho	ock				
Hazards		Preventions			
Contact with live nerg	y sources	PTW, energy isolation, PPE			
Consequences		Mitigations			
Possibility of injury to	personnel		edical treatment including		
Possibility of fatality		medivac			
Risk 15	Risk Category: Medium		ALARP?: Yes		
Rank:					
RECOMMENDATION	IS:				

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**	Γ	MAJOR	RACCII	DEN'	T HAZARD	\top		APPENDIX III
Transocean	RISK ASSESS DEEPWATER H							AIT LIVOIX III
, manaocam	_	DEE	PWAIL	EK H	ORIZON			
	oonpoo	ol						
NAME: LOCATION: M	idshins	, frames	11u to 1	19 u				
DIMENSIONS: 65ft x 115ft	lusilips	, marries	Tuto	J u	MANNING: As	requi	red	
POWER / FLUID / CONTROL	LINES	3:						
120v, hydraulic lines, fire water, hp co choke and kill hoses, rigid conduit, m	ontrol line	s tine tension	ner hoses					
onake and his nodes, rigid conduct, in	aa boost	inic, teriolo	1101 110000					
CONTROL SYSTEMS:								
Tensioner control panel BOP capture system panel, tensioner	r air/o i l sk	d d						
, , , , , , , , , , , , , , , , , , , ,								
HVAC / DUCTING:								
None								
PASSIVE FIRE PROTECTION	N:							
Deck: C				ı	ckhead:	С		
Forward Bulkhead: A-60 Port Bulkhead: A-0					Bulkhead:	C		
Port Bulkhead: A-0					rboard khead:	A-0		
Comments / Recommendati	ons							
FIRE/GAS DETECTION:								
	расе	Du	ıct	_			Space	Duct
Constant Manning				Нус	irocarbon Detector	(s)		
Flame Detector(s)] [H₂S	Detector(s)	`	\boxtimes	
Heat Detector(s)	\vdash	<u> </u>	-	Oth	er:	-		
Smoke Detector(s) Comments / Recommendati	ons							L
Tommendat,	0113							
FIRE FIGHTING EQUIPMENT		· <u> </u>						
FIRE FIGHTING EQUIPMEN	<u> :</u>	Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(s)			Xajut		CO ₂ Extinguisher	(s)		
H₂O Extinguisher(s)					Foam	(-,		
Fixed H₂O (Deluge, Sprinklers	,				Extinguisher(s)	a)		
etc.)	γ,				Fire Water Hose(s)	\boxtimes	
Fixed Halon					Fixed CO ₂			
Other:								
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Comments / Recommendations							
COMMUNICATIONS	, ETC. :						
Telephone		CCTV		PA Spe			
Fire Alarm Button	닏ㅣ	Bilge Alarm	닏		ency Lighting	닏	
GA Alam Button		General Alarm		Other:			
Comments / Recomments	mendations_						
ESCAPE ROUTES:							
Forward to stairs, aft	to ladder One	door stbd to Com	pressor Room	two doo	rs port to HPII	Room	
, orward to otalio, air	to laddon. One	acor otba to com	process recent	,o aoo	o port to the o	1.00111	
COMPARTMENT: 1	Moon Pool						
FIRE:							
Ignition Sources / Fu	uel		Prevention	s (Note E	X equipment)		
Electric wiring/shorts					nce and inspect	ions	
Hydraulic fluid			Housekeepi		no ana moposi		
			Eex equipm				
			ESD's				
Consequences			Mitigations				
Damage to equipmen	t/compartment		Fire fighting capabilities				
Could impact BOP control					l treatment inclu	uding	
Could impact Bot Control			medivac			•	
			Alternate control of BOP's (ROV intervention)				
Risk 16	Risk Catego	ry: Medium			ARP?: Yes		
Rank:							
EXPLOSION:							
Ignition Sources / Fu	uel				X equipment)		
Electric wiring/shorts		Preventive	maintena	nce and inspect	ions		
Metal to metal contact	t (sparks)		Eex equipm				
Gas from well					res - gas handli	ng	
Consequences			Mitigations				
Possibility of damage		compartment	Fire fighting	capabilit	ies		
could impact well con	trol			of medica	I treatment incl	uding	
			medivac			• • >	
			Alternate co		OP's (ROV inte	rvention)	
Risk 16	Risk Catego	ry: Medium		AL	ARP?: Yes		
Rank:							
FLOOD: Hazards			Prevention				
N/A			Drains.				
I IVA			Dianis.				
Consequences			Mitigations				
	_		T				
Risk	Risk Catego	ory:		AL	ARP?: Yes /	No	
Rank:							
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OTHER:					
			Preventions		
Hazards			Preventions		
Consequences			Mitigations		
Risk	Risk Category	:	AL	ARP?: Yes/	No
Rank:					
RECOMMENDATION	JS.				
Maintain all alarm det		un systems			
Wallitalli all alailli del	ection - shat dov	vii systems.			
COMPARTMENT	Mud Mixin	a Room			
NAME:	Widd William	9 1100111			
LOCATION:	2 nd deck	ft section of sa	ack store		
	orox. 11m x 12m		MANNING: 0-2	,	
			MANIMO. 0-2	<u>-</u>	
POWER / FLUID / CO					
120v, 480v, fire water, lp/h Brine, base oil, drill water,					
High pressure wash down	dry bulk				
riigii pressure wasii down					
CONTROL SYSTEM	S:				
SVC OS-8 (can command		mon)			
Pressure washer controls	Juni, annung und uum				
Lighting panel LP-041					
Emergency lighting panel is	EP-080				
HVAC / DUCTING:					
Exhaust FD-43, Supp	ly is from sack st	ore FD-40. Fi	re zone 16.		
					<u>-</u>
PASSIVE FIRE PRO					
Deck:	A-0		Deckhead:	A-0	
Forward Bulkhead:	Open to sack :	store	Aft Bulkhead:	A-0	
Port Bulkhead:	A-0		Starboard	A-0	
			Bulkhead:		
Comments / Recom	mendations				
FIDE (CAS DETECT)	014				
FIRE/GAS DETECTI					
	Space	Duct		Space	Duct
Constant Manning		_	Hydrocarbon Detector	r(s) <u></u>	
Flame Detector(s)			H₂S Detector(s)		
Heat Detector(s)			Other:	_ 🗆	
Smoke Detector(s)					
Comments / Recom	mendations				
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FIRE FIGHTING EQU	JIPMENT:							
		Space	Adjacer	nt		Space	Adjacent	
Dry Powder Extinguis	her(s)				inguisher(s)			
H ₂ O Extinguisher(s)				Foam	. , ,			
F: 111.6.5.				Extingui			_	
Fixed H ₂ O (Deluge, S	prinklers,			Fire Wa	ter Hose(s)			
etc.) Fixed Halon		[Eisad O	^	F-7		
Other: Fire Axe				Fixed C	O_2			
Comments / Recommendations								
COMMUNICATIONS	, ETC. :							
Telephone		CCTV			PA Speaker		\boxtimes	
Fire Alarm Button	⊠∣	Bilge Alar			Emergency I			
GA Alam Button		General A	Alam		Other: Drillin	g Talk Back	$oxed{\boxtimes}$	
Comments / Recomments	mendations							
ESCAPE ROUTES:								
Primary – P/F stair to	riser deck							
Secondary - S/A doo	r to #6 E/R 2 nd	deck. aft t	o passage	eway door. L	up stairs to aft i	main deck		
Secondary – S/A door to #6 E/R 2 nd deck, aft to passageway door, up stairs to aft main deck. COMPARTMENT: Mud mixing Room								
FIRE:	vidu illixilig Ro	JUIII						
				Prevention	s (Note FY ear	inment)		
Ignition Sources / Fuel Preventions (Note EX equipment)								
Preventive maintenance and inspections								
Consequences				Mitigations				
Damage to equipmen				Firefighting	capabilities			
Possibility of injury to personnel					of medical treal	ment includ	ing	
				medivac				
Risk 15	Risk Catego	ry: Med	ium		ALARP?	: Yes		
Rank:								
EXPLOSION:								
Ignition Sources / Fu	uel			Preventions (Note EX equipment)				
Consequences				Mitigations				
Consequences				maganons				
Risk	Risk Catego	ory:			ALARP'	?: Yes/N	0	
Rank:								
FLOOD:								
Hazards	Hazards Preventions							

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		Drains.		
		Drains.		
Consequences		Mitigations		
Risk	Risk Category:		ALARP?: Yes / No	
Rank:				
OTHER: Chemicals/n	nud, pressure, burns			
Hazards		Preventions		
Contact with chemical	s, inhalation of dust	Preventive maintenance and inspections		
Pressure from hp mud		PPE		
Contact with hot surfa-	ces	Labeling of hot surfaces		
Consequences		Mitigations		
Possibility of injury to	personnel	Availability of MSDS		
		Availability of medical treatment including		
		medivac	<u>-</u>	\Box
Risk 13	Risk Category: Medium		ALARP?: Yes	
Rank:				
RECOMMENDATIONS:				
Consider placing "Warning-Hot Surfaces" signs on the mud lines in the mud mixing area				

COMPARTMENT NAME:	Mud Pit Room		
LOCATION:	Midships inboard of Sack Sto		
DIMENSIONS: 37.2m X 8m	1	MANNING:	Intermittent
POWER / FLUID / CONTROL			
120v, drill water, chemicals, sea water	er, fire water		
Base oil, lp/hp mud			
CONTROL SYSTEMS:			
Start and stop buttons for pumps			
HVAC / DUCTING:			
Fire Damper #13, #14, #15, #	16, and #17		
	<u> </u>		
PASSIVE FIRE PROTECTIO	N:		
Deck: A-0	De	ckhead:	A-0
Forward Bulkhead: A-0	Aft	Bulkhead:	A-60
Port Bulkhead: A-0	Sta	rboard	A-0
, , , ,		khead:	, , ,
		Kileau.	

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APPENDIX II	I
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Comments / Recommendations						
FIRE/GAS DETECTION	ON:	-	***			
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s)	Space	Duc	Hyd H ₂ S	drocarbon Detect Detector(s) er:	or(s) Space	Duct
Comments / Recomm	nendations					
FIRE FIGHTING EQU	IPMENT:					
		Space	Adjacent		Space	Adjacent
Dry Powder Extinguish H ₂ O extinguisher(s)	her(s)			CO ₂ Extinguish Foam Extinguisher(s)		
Fixed H₂O (Deluge, S Fixed Halon	prinklers, etc.)		_	Fire Water Hos		⊠
Other:	and discrete			L		
Comments / Recomments / Recomme	tside port door al	ong with fi	re station #	12, Fire Station	#13 and the CO	2 pull box is
COMMUNICATIONS,		0.000				
Telephone #250		CCTV			peaker	\boxtimes
Fire Alarm Button Bilge Alarm GA Alarm Button Bilge Alarm General Alarm Other:			쒸			
Comments / Recomm		Conorary		23 00.0	·	
Located center fwd of the pit room, two void spaces protrude out into the space. Piping for the Trip tanks run into						
	these void spaces. Around the piping a gap exists, thus causing uncontrolled air to flow into a CO2 controlled space				trolled space	
ESCAPE ROUTES: When coming out of the mud pit room, take a left and go directly to the sack room. Once in the sack				h)-		
room utilize the stairs			and go dire	ectly to the sack i	room. Once in t	ne sack
COMPARTMENT: N	Mud Pit Room					
FIRE:						
Ignition Sources / Fu	iel		Prev	ventions (Note E	X equipment)	,
Electric wiring/shorts			Prev	entive maintena	nce and inspect	ions
Metal to metal contact	ts			equipment		
Gas			Pres	ssurization of spa	ce, well control	gas handing
Consequences			Miti	gations		
Possibility of damage	to equipment/con	npartment		Firefighting capabilities		
Possibility of injury to personnel Availability of medical treatment						
Risk 9 Rank:	Risk Category:	Low		AL	ARP?: Yes	
EXPLOSION:						_
Ignition Sources / Fuel Preventions (Note EX equipment)						
Electric wiring/shorts Preventive maintenance and inspections			ions			
Metal to metal contacts Gas Eex equipment Pressurization of space, well c			ice, well control	/gas handing		
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Consequence			Mitigations			
Possibility of damage to equipment/compartment			Firefighting capabilities			
Possibility of injury to personnel			Availability of me	Availability of medical treatment		
Risk	9	Risk Category: Low		ALARP?: Yes		
Rank:		ruen emegery. Zen				
FLOOD:						
Hazards			Preventions			
			Drains.			
Consequence	es		Mitigations			
		D: 1 0 1		***************************************		
Risk Rank:		Risk Category:		ALARP?: Yes / No		
OTHER: Che	omicals					
Hazards	citiicais		Preventions			
Contact with	chemica	s in mud	PPE			
	0110111100	io in maa	1			
Consequence			Mitigations			
Possibility of	injury to	personnel	Availability of medical treatment			
		availability of MSDS				
Risk	7	Risk Category: Low		ALARP?: Yes		
Rank:	D 4 T 10 1					
RECOMMENDATIONS:						

COMPARTMENT	Center Mud Pump Room		
NAME:	Ochler Maa'r amp Room		
LOCATION:	3 rd Deck Aft		
DIMENSIONS: 37.2m X	8.5m	MANNING:	Intermittent
POWER / FLUID / CONTR	ROL LINES:		
120v, 480v, rig air, drill water, sea water, fire water Lp/hp mud lines Mud Pump Control Lines Pneumatic Control Lines			
Main Engine Fuel Oil Supply Line	es		
CONTROL SYSTEMS:			
#2 Mud Pump Controls			
#3 Mud Pump Controls			
Main Engine Fuel Oil Shut-off for E/R #3			
Main Engine Fuel Oil Shut-off for	E/R #4		

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HVAC / DUCTING:						
Ventilation Ducting Fire Dampers						
PASSIVE FIRE PROTECTION:						
Deck: A-0		Deckhead: A-0				
Forward Bulkhead: A-0		Aft Bulkhead: A-60	0			
Port Bulkhead:		Starboard				
		Bulkhead:				
Comments / Recommendations	_	•				
Port Bulkhead open to Port Mud Pump Roor Stbd Bulkhead open to Stbd Mud Pump Roo						
FIRE/GAS DETECTION:						
Space	Duct		Space	Duct		
Constant Manning		Hydrocarbon Detector(s)	\boxtimes			
Flame Detector(s)		H ₂ S Detector(s)	\boxtimes			
Heat Detector(s)		Other:				
Smoke Detector(s)						
Comments / Recommendations Smoke Detectors #ASH-172506, ASH-1725	26 ACH 172706 9 AG	SH 470704				
H2S Detector #TGD-172501LH	20, A3H-172700, & A	50-172724				
Combustible Gas Detector #CGD-172501LF						
FIRE FIGHTING EQUIPMENT:						
	Space Adja		Space	Adjacent		
Dry Powder Extinguisher(s)		CO ₂ Extinguisher(s)				
H ₂ O Extinguisher(s)		Foam Extinguisher(s)				
Fixed H ₂ O (Deluge, Sprinklers,		Fire Water Hose(s)		\boxtimes		
etc.)	-	1 5				
Fixed Halon		Fixed CO ₂				
Other:		<u> </u>				
Comments / Recommendations						
Fire stations 12, 13, 30, & 31 Foam Eductor at Fire Station #31		CO2 Release for #3 Engine Room CO2 Release for #4 Engine Room				
CO2 Release for MCC Room (Port)		CO2 Release for Mud Pit Room				
CO2 Release for MCC Room (Stbd)						
COMMUNICATIONS, ETC. :	0.51					
Telephone ⊠ Fire Alarm Button ⊠	CCTV Bilgo Alasm	PA Speaker				
Fire Alarm Button	Bilge Alarm General Alarm	☐ Emergency ☐ Other: Talk-				
Comments / Recommendations	Ocheral Alami_	ZS Other. Talk	Dack			
Telephone #336		Fire Alarm Buttons #XS-172527, X	(S-172703, XS-1	72904, XS-		
Talk-back #27		172920, & XS-172B04				
ESCAPE ROUTES:		<u> </u>				
Primary: Aft through Passageway to ECR Alternate: Stbd through Sack Room, then to	the Main Deck					
COMPARTMENT: Center Mud P	ump Room					
FIRE:						
Ignition Sources / Fuel		Preventions (Note EX eq				
Electric wiring/shorts		Preventive maintenance a	and inspectio	ns		
Metal to metal contacts			Eex equipment			
Gas		Pressurization of space, v	veli control/ga	as handing		
		·				

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APPENDIX III

Consequences		Mitigations				
	to equipment/compartment	Firefighting capabilities				
Possibility of injury to personnel		Availability of medical treatment				
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:						
EXPLOSION:						
Ignition Sources / Fu	iel		ote EX equipment)			
Electric wiring/shorts		Preventive main	enance and inspections			
Metal to metal contact	ts	Eex equipment				
Gas		Pressurization of space, well control/gas handing				
Consequences		Mitigations				
Possibility of damage	to equipment/compartment	Firefighting capa				
Possibility of injury to	personnel	Availability of me	edical trealment			
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:						
FLOOD:						
Hazards		Preventions				
		Drains.				
Consequences		Mitigations				
Consequences		Wiitigations				
		1				
		1				
Risk	Risk Category:		ALARP?: Yes / No			
Rank:	The same golds		1.2			
OTHER: Chemicals, p	pressure					
Hazards	7.000410	Preventions				
Contact with chemical	s in mud	PPE				
High pressure mud lin		Preventive maintenance and inspections				
J. J. J. J. J. J. J. J. J. J. J. J. J. J	. ggg	including ultra sound of piping				
Consequences		Mitigations				
Possibility of injury to	nersonnel	Availability of medical treatment				
i coordinaty of injury to	personner	Availability of MS				
		ESD's	,50			
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:	Lon		1			
RECOMMENDATION	S:					
		ainer for this space	Also consider the installation of			
Consider the provision of an oily waste disposal container for this space. Also consider the installation of an approved flammable storage locker.						
F F	an approved naminable storage locker.					

COMPARTMENT NAME:	Stbd Mud Pump Room		
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LOCATION:	3 ^{ra} Deck	Aft							
DIMENSIONS: 15m >					MANNIN	G: As I	Requi	red	
POWER / FLUID / CON									
120v, 480v, Lp/hp mud, sea w Pneumatic Control Lines	ater, drill water,	fire water.							
Control Lines for Mud Pump #	4								
Main Engine Fuel Oil Lines									
CONTROL SYSTEMS:									
Mud Pump Controls #4 Control Box for Emergency Fu	uel Oil Solenoids								
Emergency Fuel Oil Shut-off \	/alves for Main I	Engine #5							
Emergency Fuel Oil Shut-off \	/alves for Main I	Engine #6							
HVAC / DUCTING:									
Ventilation ducting									
Fire Dampers (
PASSIVE FIRE PROTE	CTION:								
Deck:	A-0			Dec	khead:		A-0		
	A-0				Bulkhead:		A-0		
Port Bulkhead:					rboard		A-0		
	4-4			Bull	khead:				
Comments / Recomme	endations								
FIDE (DAD DETECTION									
FIRE/GAS DETECTION							$\overline{}$	Canan	Duct
Constant Manning	Space	Du	Ct	L	Irocarbon I	Dotoctor((C)	Space	Duct
Flame Detector(s)		1 -	٦ .		Detector((S)		
Heat Detector(s)		-	╡ ゚		er:		1	Ħ	
Smoke Detector(s)			f	Oth	OI		-		
Comments / Recomme	endations								
FIDE FIGURING FOUR	NATALT.								
FIRE FIGHTING EQUIP	MENI:	Space	Adjad	ont				Space	Adjacent
Dry Powder Extinguishe	or(e)	· ·—	Aujau)	CO ₂ Exti	nauisher	(e)		Aujacem
H ₂ O Extinguisher(s)	:1(3)		1 12	i	Foam	nguisnen	(3)	Ä	l' H
1120 Extinguisher(s)			-	,	Extinguis	her(s)			
Fixed H ₂ O (Deluge, Spr	inklers.				Fire Wate	er Hose(s	s)	\boxtimes	
etc.)						(′		_
Fixed Halon					Fixed CC	\mathbf{O}_2		\boxtimes	
Other:				<u></u>					
Comments / Recomme		=							
Fire station #12, #13, #	30, #31 – Fire	e Alarm B	utton						
COMMUNICATIONS	TC ·							_ · +uu_	
COMMUNICATIONS, E		CCTV			[]	PA Spe	aker		
Telephone Fire Alarm Button	\boxtimes	Bilge Ala	m		H	Emerge		iahtina	\boxtimes
GA Alarm Button	Fig. 1	General A			×	Other:	oy L	g.iig	Ä
Comments / Recomme	endations	Joniolal /							
Fire dampers: XS17270		7. XS1729	20. XS	1723	04, XS172	904			
da		.,,,,,,,,,,							
ESCAPE ROUTES:									
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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX III

Make your way up the stairs to sack room. Once in the sack room the stairs are directly to the left.

COMPARTMENT: S	Stbd Mud Pump Room					
FIRE:						
Ignition Sources / Fu	ıel	Preventions (Note EX equipment)				
Electric wiring/shorts		Preventive maintenance and inspections				
Metal to metal contact	ts	Eex equipment				
Gas		Pressurization of	space, well control	/gas handing		
Consequences		Mitigations				
	to equipment/compartment	Firefighting capa				
Possibility of injury to	personnel	Availability of me	dical treatment			
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:						
EXPLOSION:						
Ignition Sources / Fu	uel		te EX equipment)			
Electric wiring/shorts			enance and inspec	tions		
Metal to metal contact	ts	Eex equipment				
Gas		Pressurization of	space, well control	/gas handing		
Consequences		Mitigations				
	to equipment/compartment	Firefighting capa				
Possibility of injury to	personnel	Availability of me	dical treatment			
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:			<u> </u>			
FLOOD:						
Hazards		Preventions				
		Drains.				
Consequences		Mitigations				
		magaarone				
Risk	Risk Category:		ALARP?: Yes	No		
Rank:						
OTHER:						
Hazards		Preventions				
Contact with chemica	ls in mud	PPE				
High pressure mud lin		Preventive maintenance and inspections				
J F	ggg	including ultra sound of piping				
Consequences		Mitigations				
Possibility of injury to	personnel	Availability of me	dical treatment			
. 2001Dinky of highly to	po. 03/11/01	Availability of MS				
		ESD's	3			
Risk 9	Risk Category: Low		ALARP?: Yes			
Rank:						
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		MAJOR	ACCII	DENT	HAZARD			PPENDIX III
Transocea	•		K ASS				A	PPENDIX III
/ Iransoceai	-	DEEF	WATE	RHC	PRIZON			
RECOMMENDATIONS:								
RECOMMENDATIONS.								
COMPARTMENT	Paint Loc	ker						
NAME:								
LOCATION:		nain deck	_					
DIMENSIONS: 2.4m x 4					MANNING: As r	equire	<u> </u>	
POWER / FLUID / CONTR	OL LINES	<u> </u>						
240V power supply								
CONTROL SYSTEMS:								
Controls for fan and light.								
HVAC / DUCTING:								
Mechanical exhaust								
PASSIVE FIRE PROTECT						• •		
Deck: A-C						A-0 A-0		
Forward Bulkhead: A-0 Port Bulkhead: A-0				l .		A-0 A-0		
Tort Baikinead:	•				head:			
Comments / Recommend	lations							
FIRE/GAS DETECTION:	Space	Du	ct			$\overline{}$	Space	Duct
Constant Manning			· ·	Hyd	rocarbon Detector(
Flame Detector(s)]		Detector(s)			
Heat Detector(s)	\boxtimes]	Oth	er:	-		
Smoke Detector(s)	<u> </u>							
Comments / Recommend Heat detector not yet installed.	ations							
FIRE FIGHTING EQUIPM	ENT:						•	A -1! 4
Day Day day 5 dis suisti suis		Space	Adja	cent	CO ₂ Extinguisher	(c)	Space	Adjacent
Dry Powder Extinguisher(s H ₂ O Extinguisher(s)	5)	H	ì ⊨	1	Foam	(3)	님	l H
1 120 Extinguisher(3)			-	-	Extinguisher(s)			
Fixed H ₂ O (Deluge, Sprink	lers,				Fire Water Hose(s	s)		
etc.)					Fired OC			
Fixed Halon				7	Fixed CO ₂		\boxtimes	
Other:				<u> </u>				

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Comments / Recom	mendations			
COMMUNICATIONS	- FTO			
COMMUNICATIONS Telephone	CCTV	☐ PA Speaker ☐		
Fire Alarm Button	☐ Bilge Alarm	Emergency Lighting		
GA Alarm Button	General Alam	n Other:		
Comments / Recommendations				
Comments / Recom				
ESCAPE ROUTES:				
1 door to riser deck				
COMPARTMENT:	Paint Locker			
FIRE:	Faill Locker			
Ignition Sources / F	iual .	Preventions (Note EX equipment)		
Electric wiring/shorts		Preventive maintenance and inspections		
Flammable liquids		Housekeeping		
Spontaneous combu	stion of dirty rags	riodokooping		
Consequences		Mitigations		
Possibility of damage	e to compartment	Firefighting capabilities		
Possibility of injury to	personnel	Availability of medical treatment		
Risk 9	Risk Category: Low	ALARP?: Yes		
Rank:				
EXPLOSION:				
Ignition Sources / F		Preventions (Note EX equipment)		
Electric wiring/shorts		Preventive maintenance and inspections		
Flammable liquids fu		Housekeeping - keeping containers sealed		
Spontaneous combu	stion of dirty rags			
Consequences		Mitigations		
Possibility of damage Possibility of injury to		Firefighting capabilities Availability of medical treatment		
Risk 9 Rank:	Risk Category: Low	ALARP?: Yes		
FLOOD:				
Hazards		Preventions		
riazaius		Drains.		
		Diams.		
Consequences		Mitigations		
Risk	Risk Category:	ALARP?: Yes / No		
Rank:				

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OTHER: Chemicals, fumes					
Hazards		Preventions			
Exposure to toxic liq	uids/fumes	PPE			
		Ventilation			
_					
Consequences		Mitigations			
Possibility of injury to	personnel	Availability of MSDS			
	•	Availability of medical treatment including			
		medivac			
Risk 9	Risk Category: Low	ALARP?: Yes			
Rank:					
RECOMMENDATIO	NS:				

COMPARTMENT NAME:	Port Access	Tunnel				
LOCATION:	Port Pontoc	n				
DIMENSIONS: 31m	n x 1.6m		MANNING:			
POWER / FLUID / CO	NTROL LINES:					
120v, 480v, bilge lines	s, rig air, fuel					
CONTROL SYSTEMS						
Transponder shaft in s	sp <mark>ace with manu</mark> a	I and electric	c control systems			

HVAC / DUCTING:						
Ventilation fans and d	ucting on each en	d.				
DACCIVE FIRE DROT	TECTION.			_		
PASSIVE FIRE PRO	A-0		Deckhead:	A-0		<u> </u>
Forward Bulkhead:	A-0 A-0		Aft Bulkhead:	A-0 A-0		
Port Bulkhead:	A-0 A-0		Starboard	A-0		
Fort Daikileau.	A-0		Bulkhead:	Λ-0		
Comments / Recomm	mendations	_	Danaroda			
	nonautrono					
FIRE/GAS DETECTION	<u> </u>					
TIKE OAO DE LEOTIK	Space	Duct			Space	Duct
Constant Manning		Duck	Hydrocarbon Detecto			
Flame Detector(s)			H ₂ S Detector(s)	()		
Heat Detector(s)			Other:			
Smoke Detector(s)	\square			_		
Comments / Recomments	mendations					
ASH172015/ASH172	016					
					05	0.5
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FIRE FIGHTING EQUI	FIRE FIGHTING EQUIPMENT:						
		Space	Adjacen	t		Space	Adjacent
Dry Powder Extinguish	er(s)				CO ₂ Extinguisher(s)		
H₂O Extinguisher(s)				Foam			
First III O (Dalassa O		F-1		Extinguis			
Fixed H ₂ O (Deluge, Sp	rinklers,	│		Fire wat	er Hose(s)		⊔
etc.) Fixed Halon				Fixed Co	-		
Other:		H		Fixed Co	\mathcal{J}_2		
Comments / Recomm	endations						
FS #54							
COMMUNICATIONS,	ETC. :						
Telephone		CCTV			PA Speaker		
Fire Alarm Button	\boxtimes	Bilge Alar			Emergency I	_ighting	\boxtimes
GA Alarm Button		General A	Alam		Other:		
Comments / Recomm							
Fire alarm button XS17	2014						
ESCAPE ROUTES:							
Two ways out. Either th	hrough the do	or to port	gmug bwł	room or the	port aft pump	room and ta	ake the
elevator or ladder up.		or to port	ma pamp		port art parrip	room and t	ano 1110
COMPARTMENT: P	ort Access Tu	ınnel					
FIRE:	OIT ACCESS TO	inner				O, MAGNET	
Ignition Sources / Fue	el		F	Preventions	(Note EX equ	inment)	
ignition courses / rus			<u> </u>	10101110112	(Note Diver	приченну	
Consequences				/litigations			
Risk	Dial Ostana						
Rank:	Risk Catego	ry:			ALARP?	': Yes/N	0
EXPLOSION:		·					
Ignition Sources / Fue				reventions	(Note EX equ	uinment)	
-g.maon obdiceo / i de			-	1010110113	TOTOLE EX BY	принениј	
Consequences			N	litigations			
Risk	Risk Catego	rv.			ALARP?	P: Yes/N	
Rank:	Juligo	· y ·			ALAINE !	. 165/N	
FLOOD:							
Hazards			F	reventions			
					-		

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ship collision (major hazard tables)		Drains.			
Consequences		Mitigations			
Risk Rank:	Risk Category:		ALARP?:	Yes / No	
OTHER: Struck by/ca	ught between				
Hazards		Preventions			
Sliding watertight doors		Training in operation Audible alarms on operation Preventive maintenance and inspections (alarms)			
Consequences		Mitigations			
Possibility of injury to personnel Possibility of fatality		Availability of medical treatment including medivac Notification to CCR when entering pontoons Remote indication for doors			
Risk 15 Rank:		ALARP?:	Yes		
RECOMMENDATIONS:					

COMPARTMENT Port fwd electrical thruster space upper and lower (typical) NAME:							
LOCATION:	LOCATION: P/F column, 9.1m and 12.1m levels, aft.						
DIMENSIONS: App	orox. 11m x 5.5m	MANNING:	None normally				
POWER / FLUID / CO	ONTROL LINES:						
120v, 11kV power, co	ooling water, drill water, base oil	,					
CONTROL SYSTEM	S:						
	uster drive controls, emergency steerin	g controls.					
Process station #7							
HVAC / DUCTING:							
Package A/C unit, WTD 17	72312, Fire zone 48						
PASSIVE FIRE PRO							
Deck:	A-0	Deckhead:	A-0				
Forward Bulkhead:	A-60	Aft Bulkhead:	A-0				
Port Bulkhead:	A-0	Starboard	A-0				
		Bulkhead:					
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Comments / Recomments / Recomme						
FIRE/GAS DETECTION	ON:					
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s) Comments / Recomments	Space	Duct	Hydrocarbon I H ₂ S Detector(Other:	s)	Space (s)	Duct
FIRE FIGHTING EQU	JIPMENT:					
Dry Powder Extinguis H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, S etc.) Fixed Halon Other:		Space Adjac	cent CO ₂ Extin Foam Extinguis Fire Wate	sher(s) er Hose(s		Adjacent
Comments / Recom	mendations					
COMMUNICATIONS						
Telephone Fire Alarm Button	\boxtimes	CCTV Bilge Alarm	님 !	PA Spe	aker ncy Lighting	\boxtimes
GA Alarm Button	片	General Alarm	₩ I	Other:	incy Lighting	H H
Comments / Recom	mendations	ochorary tallin		01		
ESCAPE ROUTES:						
Spiral stairway to 2 nd	deck accommo	odation then inboa	ard to fwd door	leading to	o lifeboat deck.	
COMPARTMENT:	Port Fwd Elect	rical thruster Space	ce, upper and lo	wer)		
FIRE:						
Ignition Sources / F			Preventions			
Electrical wiring/short	is .		Preventive m	naintenan	ce and inspect	ions
Consequences	40.00.00.00	0000000000000	Mitigations	onah:!!#'-		
Possibility of damage	to equipment	сотраптент	Firefighting of Availability of	•		
Risk 9 Rank:	Risk Catego	ery: Low		ALA	ARP?: Yes	
EXPLOSION:						
Ignition Sources / F	uel		Preventions	(Note E	X equipment)	
Consequences			Mitigations			
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			_				
Risk		Risk Category:			ALARP?: Yes / No		
Rank:		mon outogory.			712711		
FLOOD:							
Hazards				Preventions			
				Drains.			
Consequences				Mitigations			
Risk		Risk Category:			ALARP?: Yes / No		
Rank:		Risk Calegory.			ALARP?: Yes/No		
	cal she	ock, struck by/caug	ht hetweens	<u> </u>			
Hazards	cai siic	JON, SHOOK Dy/Caug	in betweens	Preventions			
Contact with live	enem	IV SOURCES		PPE, PTW, ener	ny isolation		
Sliding watertigh				Training in operation of doors/audible alarms			
Oliding Materiagn	it door	•		Preventive maintenance and inspections			
Consequences				Mitigations			
Possibility of inju		personnel			edical treatment including		
Possibility of fata		00100111101		medivac	alour troutmont moraling		
, , , , , , , , , , , , , , , , , , , ,				Remote indication	on for doors		
				Notifications to C	CCR when entering columns		
Risk 15	;	Risk Category:	Medium		ALARP?: Yes		
Rank:							
RECOMMENDA	TION	S:					
Consider the pla	ceme	nt of a sign detailin	g the steps to	take in an electric	shock situation.		

COMPARTMENT	Number One Process Unit		
NAME:			
LOCATION:	Port Forward Main Deck, behin	d CCR	
DIMENSIONS: 4m X 3.8	8m	MANNING:	As Required
POWER / FLUID / CONTE	ROL LINES:		
1810462 24v DC Power Distribu	tion		
Lighting LP017-18D 120v Power Outlets LP-017-20B			
120V Power Outlets LP-017-20B			
1			

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	ADIX II

CONTROL SYSTEMS	:							
Process 23	MRU #1							
Process 24 UPS 10								
Gyro Compass Number 2								
Light Control Navaid System	1							
HVAC / DUCTING:								
Air conditioned, manual dam Natural exhaust, manual ver		khead.						
PASSIVE FIRE PROT	ECTION:							
Deck:	A-60				khead:	A-60		
Forward Bulkhead:	A-60				Bulkhead:			
Port Bulkhead:	A-60				rboard	A-60	1	
Comments / Recomm	nendations			Bui	khead:			
FIRE/GAS DETECTIO	N·							
TIKE ONO DETECTION	Space	Du	ıct				Space	Duct
Constant Manning				Hvo	Irocarbon	Detector(s)		
Flame Detector(s)			1 J		Detector(
Heat Detector(s)			<u> </u>		er:			
Smoke Detector(s)	\boxtimes	_ [] [_	_
Comments / Recomm ASH 172201	nendations							
A011 172201								
FIRE FIGHTING EQUI	PMENT:							
	PMENT:	Space	Adjac	ent			Space	Adjacent
FIRE FIGHTING EQUI		Space	Adjac	ent	CO ₂ Exti	nguisher(s)	Space	Adjacent
FIRE FIGHTING EQUI		Space	Adjac	ent	Foam		Space	
Dry Powder Extinguish H ₂ O Extinguisher(s)	er(s)	Space	Adjac	ent	Foam Extinguis	sher(s)	Space	
FIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sp	er(s)	Space	Adjac	ent	Foam Extinguis		Space	
Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.)	er(s)	Space	Adjac	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s)	Space	
FIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sp	er(s)	Space	Adjac	ent	Foam Extinguis	sher(s) er Hose(s)	Space	
PIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon	er(s) orinklers,	Space	Adjac	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s)	Space	
PIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other:	er(s) orinklers,	Space	Adjac	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s)	Space	
FIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomm	er(s) orinklers, nendations	Space	Adjac	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s)	Space	
PIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other:	er(s) orinklers, nendations	Space	Adjac	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂	Space	
FIRE FIGHTING EQUID Dry Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments	er(s) orinklers, nendations	CCTV		ent	Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂		
FIRE FIGHTING EQUID Try Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments / Recomments / Recomments / Telephone	er(s) orinklers, nendations		m	ent	Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂	ighting	
FIRE FIGHTING EQUID Try Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments er(s) orinklers, nendations ETC.:	CCTV Bilge Alar	m	cent	Foam Extinguis Fire Wat	sher(s) er Hose(s) D ₂ PA Speaker Emergency I	ighting Combustible		
FIRE FIGHTING EQUID TO Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments / Recomments / Recomments / Recomments / Relation Specific Alarm Button	er(s) orinklers, nendations ETC.:	CCTV Bilge Alar	m	ent	Foam Extinguis Fire Wat	PA Speaker Emergency L Other:Toxic/e	ighting Combustible	
FIRE FIGHTING EQUID Try Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments er(s) orinklers, nendations ETC.:	CCTV Bilge Alar	m	cent	Foam Extinguis Fire Wat	PA Speaker Emergency L Other:Toxic/e	ighting Combustible		
FIRE FIGHTING EQUID Try Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments er(s) orinklers, nendations ETC.:	CCTV Bilge Alar	m	eent	Foam Extinguis Fire Wat	PA Speaker Emergency L Other:Toxic/e	ighting Combustible		
FIRE FIGHTING EQUID Try Powder Extinguish H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Spetc.) Fixed Halon Other: Comments / Recomments er(s) orinklers, nendations ETC.:	CCTV Bilge Alar	m		Foam Extinguis Fire Wat	PA Speaker Emergency L Other:Toxic/e	ighting Combustible		

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APPENDIX III

	Number 1 Process Unit					
FIRE:						
Ignition Sources / Fi	uel	Preventions (Note EX equipment)				
Electric wiring/shorts		Preventive maintenance and inspections				
Consequences		Mitigations				
Possibility of damage	to equipment/compartment	Firefighting capabilities Availability of medical treatment including medivac				
Risk 9 Rank:	Risk Category: Low	ALARP?: Yes				
EXPLOSION:						
Ignition Sources / Fu	nel	Preventions (N	ote EX equipment)			
Consequences		Mitigations				
		magatons				
Risk Rank:	Risk Category:		ALARP?: Yes / No			
FLOOD:						
Hazards		Preventions				
Tiazarus		Drains.				
Consequences		Mitigations				
Risk	Dials Catagony		ALARP?: Yes / No			
Rank:	Risk Category:		ALAKP?: Yes / No			
OTHER: Electrical st	nock					
Hazards		Preventions				
Contact with live energy sources		Preventive maintenance and inspections PPE, PTW, energy isolation				
Consequences Mitigations						
Possibility of injury to Possibility of fatality	personnel	Availability of medical treatment including medivac				
Risk 15 Risk Category: Medium ALARP?: Yes Rank:						
RECOMMENDATION	is:					

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Consider the placement of a "High Voltage" warning sign on the door.

COMPARTMENT NAME: Rig Floor LOCATION: Center of rig main deck DIMENSIONS: MANNING: 9 23m X 11m POWER / FLUID / CONTROL LINES: 120v, 480v, high pressure wash down Hydraulics, fire water, rig air, hp mud **CONTROL SYSTEMS:** Stbd fwd hydraulic valve controls side & slide mousehole. Manual hydraulic valve controls flow to center stbd manifold for hydraulics for spider gimble operation. HVAC / DUCTING: Fire station located at the port aft bulkhead on rig floor. PASSIVE FIRE PROTECTION: Deck: Deckhead: N/A Forward Aft Bulkhead: Bulkhead: Port Bulkhead: Starboard Bulkhead: Comments / Recommendations 2 gas detectors: 1st located on fwd bulkhead, 2nd stbd center in front of draw works FIRE/GAS DETECTION: Space Duct Space Duct Constant Manning \boxtimes Hydrocarbon Detector(s) \boxtimes Flame Detector(s) H₂S Detector(s) Heat Detector(s) Other: Smoke Detector(s) Comments / Recommendations FIRE FIGHTING EQUIPMENT: Space Adjacent Adiacent Space Dry Powder Extinguisher(s) \boxtimes CO₂ Extinguisher(s) \times H₂O Extinguisher(s) Foam Extinguisher(s) Fixed H₂O (Deluge, Sprinklers, etc.) Fire Water Hose(s) \boxtimes Fixed Halon Fixed CO2 Other: Comments / Recommendations Co2 bottles are located on the port and stbd fwd bulkheads of the rig floor COMMUNICATIONS, ETC. : Telephone CCTV \boxtimes PA Speaker \boxtimes Fire Alarm Button Bilge Alarm **Emergency Lighting REVISION NO:** 01 **PAGE** OF REVISION DATE: 29 AUGUST 2004 III-[APG] 154

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APPENDIX I	II
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GA Alarm Butt	on Recommendations	Gen	eral Alam	Other	: Alam light be	acon		
20111110111071								
	TES: T onto riser cart 2) Po tbd door center	rt aft door 3)	Center fwd door at co	onveyo	r 4) Stbd fwd he	eavy tool		
COMPARTME	NT: Rig Floor							
FIRE:								
Ignition Source			Preventions (Note E	X equipment)			
Blowout (majo	hazard tables)							
Consequence	s		Mitigations					
Risk Rank:	Risk Catego	ry:		AL	ARP?: Yes /	No		
EXPLOSION:								
Ignition Source			Preventions (Note E	X equipment)			
Blowout (majo	r hazard tables)							
Consequence	es		Mitigations	Mitigations				
Risk	Risk Catego	ry:		AL	ARP?: Yes/	No -		
Rank:								
FLOOD:								
Hazards			Preventions					
			Drains.					
Consequence	es —		Mitigations					
				1				
Risk Rank:	Risk Catego	ory:		AL	ARP?: Yes/	No		
	ic gas release, dropp	ed/fallen ob	jects, radioactive/e	xplosiv	e materials			
Hazards		Preventions						
(major hazard	tables)							
Consequence	es		Mitigations					
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Dial.	D'. 1 O. 1			4 DDQ: \\' \(\)	
Risk Rank:	Risk Category	7:	AL	ARP?: Yes /	No
RECOMMENDATION	S:				
					
COMPARTMENT	Roustabou	ut lookor			
NAME:	Roustabot	ut locker			
LOCATION:		Deck amidship			
	m x 1.7 m		MANNING: As	required	
POWER / FLUID / CO					
Control air for damper Power cabling for fan					
CO2 supply lines					
CONTROL SYSTEMS					
Control for space heater					
HVAC / DUCTING:					
2 fire dampers					
PASSIVE FIRE PROT	ECTION:				
Deck:	A		Deckhead:	Α	
Forward Bulkhead:	A-60		Aft Bulkhead:	A	
Port Bulkhead:	A-60		Starboard Bulkhead:	Α	
Comments / Recomm	nendations		Duiknead.		
Fire dampers #69 and 70. N	Manual controls on o	outside bulkhead. I	Light control switch outside sp	ace.	
FIRE/GAS DETECTIO		Duet		0	Direct
Constant Manning	Space	Duct	Hydrocarbon Detector	(s) Space	Duct
Flame Detector(s)			H ₂ S Detector(s)		
Heat Detector(s)			Other:	_ 🗖	
Smoke Detector(s) Comments / Recomm	ondations	Ц			
ASH 172307	lenuations				
FIRE FIGHTING EQUI		Space Adjac	nont	Snaas	Adiacont
Dry Powder Extinguish		Space Aujai	CO ₂ Extinguisher	Space	Adjacent
H ₂ O Extinguisher(s)	, ,] Foam	` 📋	
Fixed U.O./Dalvar. C	rinklara		Extinguisher(s)		5 7
Fixed H₂O (Deluge, Sp etc.)	mikiers,		Fire Water Hose(s) L	
					1
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Fire Alarm Button General Alarm General Alar			MAJOR ACCIDENT HAZARD			APPENDIX III		
Fixed Halon Other: Comments / Recommendations CO2 controls in CO2 bottle room aft of space. COMMUNICATIONS, ETC.: Telephone Fire Alam Button GA Alam Button GA Alam Button GA Alam Button GOMPARTMENT: Roustabout Locker FIRE: Ignition Sources / Fuel Ignition Sources / Fuel Fiammable aerosols/hydrocarbon based greases Oliv rags Possibility of damage toc ompartment Possibility of injury to personnel Risk 9 Risk Category: Low Rank: Risk Risk Category: Risk Rank: Risk Rank: Risk Risk Category: Risk Rank: Risk	Transoc	ean						
Comments / Recommendations CO2 controls in CO2 bottle room aft of space. COMMUNICATIONS, ETC.: Telephone		Cuii	DEEPWATE	R HORIZON				
Comments / Recommendations CO2 controls in CO2 bottle room aft of space. COMMUNICATIONS, ETC.: Telephone	Fixed Halon			Eived CO		- 1	\square	1 1
COMMUNICATIONS, ETC.: Telephone CCTV PA Speaker Emergency Lighting General Alarm Other: Comments / Recommendations ESCAPE ROUTES: One door to space. Follow walkway fwd or aft to lifeboats. COMPARTMENT: Roustabout Locker FIRE: Inspired or a special properties of solid rags and flammables Firefighting capabilities Flammable aerosols/hydrocarbon based greases Oily rags Preventions (Note EX equipment) Flammable aerosols/hydrocarbon based greases Preventions (Note Ex equipment)				Fixed CO ₂				
COMMUNICATIONS, ETC.: Telephone GA Alarm Button General Alarm Comments / Recommendations ESCAPE ROUTES: One door to space. Follow walkway fwd or aft to lifeboats. COMPARTMENT: Roustabout Locker FIRE: Ignition Sources / Fuel Preventions (Note EX equipment) Inspections, housekeeping Proper storage of soiled rags and flammables Consequences Mitigations ALARP?: Yes / No Rank: Risk Category: Risk Category: Risk Category: Risk Category: Risk Category: Risk Category:		mendatio	<u>. </u>					
COMMUNICATIONS, ETC.: Telephone								
Telephone CCT			, alt of opace.					
Fire Alarm Button GA Alarm General General Alarm General General Alarm General General Alarm General Alarm General General General Alarm General General Alarm General General Alarm General G	COMMUNICATIONS	, ETC. :						
GA Alam Button General Alarm Other: Comments / Recommendations ESCAPE ROUTES: One door to space. Follow walkway fwd or aft to lifeboats. COMPARTMENT: Roustabout Locker FIRE: Ignition Sources / Fuel Preventions (Note EX equipment) Flammable aerosols/hydrocarbon based greases Oily rags Mitigations Proper storage of soiled rags and flammables Consequences Mitigations Possibility of damage toc ompartment Possibility of injury to personnel Fireflighting capabilities Availability of medical treatment including medivac Risk 9 Risk Category: Low ALARP?: Yes Rank: EXPLOSION: Ignition Sources / Fuel Preventions (Note EX equipment) Consequences Mitigations Risk Risk Category: ALARP?: Yes / No Rank: Preventions Drains. Consequences Mitigations Risk Risk Category: ALARP?: Yes / No Rank: Preventions Drains. Risk Risk Category: ALARP?: Yes / No Rank: Preventions Drains. Risk Risk Category: ALARP?: Yes / No Rank: Preventions Drains. Risk Risk Category: ALARP?: Yes / No Rank: Preventions Drains. Consequences Of Page OF	Telephone							
ESCAPE ROUTES: One door to space. Follow walkway fwd or aft to lifeboats. COMPARTMENT: Roustabout Locker FIRE: Ignition Sources / Fuel						ncy Lig	hting	
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Hazards Preventions Drains. Consequences Mitigations Risk Risk Category: ALARP?: Yes / No Rank: REVISION NO: 01 PAGE OF	T 11/4							
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Risk Risk Category: ALARP?: Yes / No Rank: REVISION NO: 01 PAGE OF				Drains.				
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ALVIOLOTITIO.	Rank:			·				
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		DELI IIA	EK PORILON			
OTHER:						
Hazards		_	Preventions			
nazaius			Fieventions			
Consequences			Mitigations			
Consequences			- Integations		_	
Risk	Risk Category:		Α	LARP?:	Yes / N	0
Rank:	J,					
RECOMMENDATIO	NS:					
					<u> </u>	
COMPARTMENT	ROV Unit					
NAME:	NOV OIII					
LOCATION:	Starboard fo	orward Main	Deck			
	Ft X 20 Ft	orward ividir	MANNING: 3			
POWER / FLUID / C			MANIMO. 3		_	
120v, 480v. Hydraulic Po		electrical contro	ol lines			
1201, 4001. Tryatauno 10	THE DIR. THE OTHER TH	CICCLICE COIN	in in es.			
20117701 21/2771						
CONTROL SYSTEM						
ROV control unit station a Winch control station.	djacent to ROV					
Junction/control boxes: C.	JBPA-018 PA/GA, DIS	JB. JB-ROV1-2.				
JB-ROV1-1, FJBT05 F&G	CONN, JB-ROV1-4 CH	arge Set (M-10	JB-ROV-2 Work Van (X-1)	01), LAN J	В,	
Radio Comm JB, Auto Te	Conn Box, JBCV 13,12	2,14 and 15. JE	3-ROV1-3, JB-ROV1-1.			
HVAC / DUCTING:						
Exh. Fan (#116) for \$	Stbd Trans Rm., Si	ıpply Fan (#	106) for Galley MF2, NA	T supply	y fan for G	alley.
PASSIVE FIRE PRO	TECTION.					
Deck:	TECTION:		Deckhead:			
Forward Bulkhead:	On main deals					
Port Bulkhead:	On main deck		Aft Bulkhead: Starboard			
FOR BUIKITEAU.			Bulkhead:			
Comments / Recom	mandations		Duikileau.			
Comments / Necoll	monuations					
EIDEIGAS DETECT	IONI					
FIRE/GAS DETECT		- Di			C====	Dest
Constant Monsins	Space	Duct	Literature de la Particio		Space	Duct
Constant Manning			Hydrocarbon Detector	or(s)	\boxtimes	
Flame Detector(s)			H ₂ S Detector(s)		\boxtimes	
Heat Detector(s)		닏	Other:			
Smoke Detector(s)						
Comments / Recom	imendations					
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APPENDIX	ı	II
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FIRE FIGHTING EQUIP	PMENT:						
Dry Powder Extinguisher H ₂ O Extinguisher(s)	er(s)	Space	Adjacer		nguisher(s)	Space	Adjacent
Fixed H ₂ O (Deluge, Spi etc.)	rinklers,				er Hose(s)		
Fixed Halon Other:				Fixed CO	O_2		
Comments / Recomme	endations		<u></u> Ļ				
FS #08, FS #09.	endations						
COMMUNICATIONS, E	ETC. :						
Telephone		CCTV			PA Speaker		\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alar	m		Emergency	Lighting	\boxtimes
GA Alarm Button	\boxtimes	General A		\boxtimes	Other:		
Comments / Recomme	endations S	Sat Phone	and VHF	Radio inside	the Oceanee	ring Control	I Rm.
Life ring on railing.						-	
ESCAPE ROUTES:							
On main deck, take sta	irs to fwd life	boats or a	ifter boats				
COMPARTMENT: RO	OV Unit						
FIRE:							
Ignition Sources / Fue	el	_		Preventions	(Note EX eq	uipment)	
Electrical wiring/shorts					naintenance a		ons
Hydraulic fluid			}				
,							
Consequences				Mitigations			
Possibility of damage to	ROV, works	shop, conti		Firefighting of	apabilities		
Possibility of injury to po					f medical trea	tment inclu	ding
Risk 14 Rank:	Risk Catego	ry: Med	lium		ALARP1	?: Yes	
EXPLOSION:							
Ignition Sources / Fue	el			Preventions	(Note EX eq	uipment)	
Consequences				Mitigations			
Risk	Risk Catego	ory:			ALARP	?: Yes/1	No
Rank:							
FLOOD:							
Hazards				Preventions	s		
				Drains.			
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APPENDIX III

Consequences		Mitigations		
Risk	Risk Category:		ALARP?: Yes / No	
Rank:	Kisk Category.		ALAN II 1037 NO	
OTHER: Pressure / E	nvironmental			
	IIIVII OI II II EIILAI	Preventions		
Hazards				
Leak from hydraulic po	ower unit, piping/stored	PPE, PTW, energ		
pressure		Preventive maintenance and inspections		
Consequences		Mitigations		
Possibility of injury to	personnel	Availability of medical treatment including		
Possibile environment		medivac		
	·	Spill response pr	ocedures	
Risk 9	Risk Category: Low		ALARP?: Yes	
Rank:				
RECOMMENDATION	S:			
Consider the installation	on of a smoke detector in the R	OV control van		

COMPARTMENT	Sack Store		
NAME:			
LOCATION:	Stbd midship aft of accom	nmodations	
DIMENSIONS: 36.2	m X 18m	MANNING:	As required
POWER / FLUID / CO	NTROL LINES:		
120v, 480v, pot water, hp wa			
Sea water, Ip mud diesel, bu	ılk		
CONTROL SYSTEMS	:		
Res mud system control, bat	ttery back-up breaker, no. 3 connection	n panel for welding outle	ts
HVAC / DUCTING:			
Fire damper and ventil	ation ducting #43, #39, #62, #2	4 #17 #16 #15 #	23. #44
- no allings: and rolling			
PASSIVE FIRE PROT	ECTION:		
Deck:	A-0	Deckhead:	A-0
Forward Bulkhead:	A-60	Aft Bulkhead:	A-60
Port Bulkhead:	A-0	Starboard	A-0
		Bulkhead:	
Comments / Recomm	nendations		
Various chemicals and oil to	tes are stored in this area at any given	time	

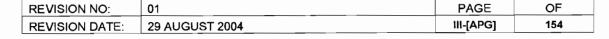
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APPENDIX III

FIRE/GAS DETECTION:				
Spa	ce Duct		Space	Duct
Constant Manning		Hydrocarbon Detector(s)		
Flame Detector(s)		H₂S Detector(s)	$\overline{\boxtimes}$	
Heat Detector(s)		Other:		
Smoke Detector(s)				
Comments / Recommendations	3			
EIRE FIGUTING FOUIDMENT.				
FIRE FIGHTING EQUIPMENT:	Space Adjac	nomt	Cnass	Adianama
Dry Powder Extinguisher(s)	Space Adjac	- 1	Space	Adjacent
H ₂ O Extinguisher(s)		J CO₂ Extinguisher(s) I Foam		
1120 Extinguisher(3)		Extinguisher(s)		
Fixed H ₂ O (Deluge, Sprinklers,		Fire Water Hose(s)		
etc.)		viato. (1000(0)		
Fixed Halon		Fixed CO ₂		
Other:] " " " " " " " " " " " " " " " " " "		
Comments / Recommendations				
Fire Station #15 located on aft bu	lkhead of fwd comp	artment and Fire Station #14	Located Fw	d bulkhead
of aft compartment				
COMMUNICATIONS, ETC. :				
Telephone 🖂	CCTV	☐ PA Speaker		\boxtimes
Fire Alarm Button	Bilge Alarm	Emergency	Lighting	
GA Alarm Button General Alarm Other:				
Comments / Recommendations				
XS 172707, XS 172725				
ESCAPE ROUTES:				
Upstairs to main deck, Fwd through	ah accommodation	or off through ED		
Opstairs to main deck, rwd tillou	gn accommodation,	or art through ER		
COMPARTMENT: Sack Store			_	
FIRE:				
Ignition Sources / Fuel		Preventions (Note EX eq	uinment)	
Electric wiring/shorts		Preventive maintenance a		ns
Class A materials/chemicals		Housekeeping	ina mopeedio	110
Ciaco, i matemale, emermieale		Tradesine opining		
Consequences		Mitigations		_
Possibility of loss of inventory/dar	nage to	Firefighting capabilities		_
compartment	-	Availability of medical trea	atment	
Risk 9 Risk Cate	gory: Low	ALARP	?: Yes	
Rank:				
EXPLOSION:				
Ignition Sources / Fuel		Preventions (Note EX eq	uipment)	
	_			
Consequences Mitigations				



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Risk	Risk Category:		ALARP?:	Yes / No	
Rank:					
FLOOD:					
Hazards		Preventions			
		Drains.			
Consequences		Mitigations			
Risk	Risk Category:		ALARP?:	Yes / No	
Rank:	_ ,				
OTHER: Chemicals/o	lust	# IR .			
Hazards		Preventions			
Exposure to toxic che	micals/ inhalation of dust	PPE			
•		Housekeeping			
Consequences		Mitigations			
Possibility of injury to	personnel	Availability of MSDS			
		Availability of medical treatment including			
		medivac			
Risk 9	Risk Category: Low		ALARP?:	Yes	
Rank:					
RECOMMENDATION	S:				

The state of the s	
COMPARTMENT Ship Service Air Compressor F	Room port
NAME:	<u> </u>
LOCATION: 2 nd deck, port side, inboard of	welding shop
DIMENSIONS: Approx. 13m X 8.1m	MANNING: As required
POWER / FLUID / CONTROL LINES:	
120v, sea water, fresh water, rig air, brine, base oil and high pressure mu Space contains rig air receiver and is a storage location for drums of oil.	d.
CONTROL SYSTEMS:	
Rig air compressor #1 and #4. fan controls for welding shop exhaust, aux exhaust.	. Machine room supply & exhaust and mud pit supply &

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HVAC / DUCTING:									
FD 30 supply, FD 34	exhaust Fire a	zone 15							
2 00 0mppi,, 1 D 04	2,014400, 1 110 2	-5110 10							
PASSIVE FIRE PRO	TECTION:								
Deck:	A-0		T	Dec	khead:		A-0		
Forward Bulkhead:	A-0				Bulkhead:		A-60	1	
Port Bulkhead:	A-0				rboard		A-0		
1 on Buikilead.	A-0				khead:		A-0		
Comments / Recom	mondations			Buil	Micau.				
Welding shop outboard of									
Treating shop outboard of	эрисс.								
					101100000000000000000000000000000000000				
FIRE/GAS DETECTI									
	Space	Du	ct					Space	Duct
Constant Manning				Hyd	Irocarbon	Detector	(s)		
Flame Detector(s)				H ₂ S	Detector	(s)	`		
Heat Detector(s)					er:				
Smoke Detector(s)]				_	_	
Comments / Recom	mendations								
ASH 172505, ASH 1									
FIRE FIGHTING EQ	UIPMENT:								
		Space	Adjac	ent				Space	Adjacent
Dry Powder Extinguis	sher(s)				CO ₂ Exti	nguisher	(s)		\boxtimes
H ₂ O Extinguisher(s)					Foam	•	. ,		
		Extinguisher(s)			sher(s)		_		
Fixed H ₂ O (Deluge, S	Sprinklers,		☐ Fire Water Hose				s)		\boxtimes
etc.)	,	_	_				,		-
Fixed Halon					Fixed CO	O_2			
Other:				1					
Comments / Recom	mendations								
COMMUNICATIONS	S. ETC. :								,
Telephone	<u>, </u>	CCTV			П	PA Spe	aker		M
Fire Alarm Button	⊠ I	Bilge Alaı	m		Ħ			iahtina	X
GA Alarm Button	H I	General A			\boxtimes	Other:	jency Lighting ⊠ Signal light tree ⊠		
Comments / Recom	mendations	Octional 7	udiii			Other.	Oigin	ar light tree	
- Comments / (CCC)	inchautions.								
ESCAPE ROUTES:									****
Go out the fwd door t	hen un the stai	inway to m	ain deck	-					
Go out the two door t	illell up tile stal	iiway to iii	airi acci	٠.					
COMPARTMENT:	Chin Consine A	ir Compre	ssor Da		Port				
	Ship Service A	ii Compre	55UI R0	OIII F	-UIL				
FIRE:				1 =		<u> </u>		,	
Ignition Sources / F					eventions				
Electrical wiring/short							ice a	nd inspecti	ons
Spontaneous combu	stion of oily wa	ste			usekeepir				
				Pr	oper dispo	sal of oil	y was	ste	
Consequences					tigations				
Possibility of damage	to equipment/	compartm	ent	Fir	efighting of	capabilitie	es		
Possibility of injury to		•						tment inclu	iding
,,,	•				edivac				-
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Risk 9 Rank:	Risk	Category:	Low		ALARP?:	Yes				
EXPLOSION:	7.4.4.									
Ignition Source	s / Fuel			Preventions (Note EX equipment)						
3						,				
Consequences			-	Mitigations		_				
						-				
Risk	Risk	Category:			ALARP?:	Yes / No				
Rank:										
FLOOD:										
Hazards				Preventions						
				Drains.						
Consequences				Mitigations						
- Dial-	- Dist	0.1			AL ABBO					
Risk Rank:	RISI	Category:			ALARP?:	Yes / No				
OTHER:										
Hazards				Preventions						
Consequences				Mitigations						
Consequences				Mitigations						
Risk	Risk	Category:			ALARP?:	Yes / No				
Rank:						, 55 / 110				
RECOMMENDA	TIONS:									
		oily waste d	lisposal conta	ainer for this space						

COMPARTMENT NAME:	Sewage Treatment Room
LOCATION:	24m Flat- Starboard Forward Column

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DIMENSIONS: 13m	1 X 17m				MANNING:	As Re	equired	
POWER / FLUID / CO	NTROL LINE	S:						
120v, 480v, drill water, pot v	water, hydraulics							
CONTROL SYSTEMS								_
Sewage treatment control p								
Cement Tank Gauging Syst								
Cement system pneumatic Rectifier Unit No. 2	valves							
Instrument Junction Box (IJ	B-068)							
HVAC / DUCTING:								
Ventilation								
PASSIVE FIRE PROT	TECTION:							
Deck:	A-0			Dec	khead:	N	/A	
Forward Bulkhead:	A-0			Aft I	Bulkhead:	A	-0	
Port Bulkhead:	A-0				rboard	A	-0	
				Bull	khead:			
Comments / Recomm								
Overhead open to deck abo	ove (28.5m Flat) a	round Cemer	nt Tanks					
FIRE/GAS DETECTION	DN:							
	Space	Du	ct				Space	Duct
Constant Manning					rocarbon Dete	ector(s))	_
Flame Detector(s)]		Detector(s)			
Heat Detector(s)]	Oth	er:			
Smoke Detector(s)			لــــــا					
Comments / Recomm								
Smoke Detector #ASH172E	24							
FIRE FIGHTING EQU	IIDMENT.							
FIRE FIGHTING EQU	TENERI.	Space	Adjad	ent			Space	Adjacent
Dry Powder Extinguis	hor(c)		Aujac	l	CO ₂ Extingu	isher(s		
H ₂ O Extinguisher(s)	ner(s)	ΙH	\ ⊢	i	Foam	151101(0	/ 胃	
1120 Extinguisher(s)		"	-	,	Extinguisher	(s)		
Fixed H ₂ O (Deluge, S	prinklers				Fire Water F			
etc.)	primitions,	"			,	(-)	_	
Fixed Halon					Fixed CO ₂			
Other:			[1	_			
Comments / Recomm	mendations							
CO2 Extinguisher #20 on F	orward Bulkhead							
COMMUNICATIONS,	ETC.:							
Telephone		CCTV				A Speal		
Fire Alarm Button	\boxtimes	Bilge Ala					cy Lighting	\bowtie
GA Alam Button		General /	Alam_		<u> </u> O1	ther:		
Comments / Recomi								
Fire Alarm Button XS-172E	03 next to Elevato	or Door						,
FORADE BOUTES								
ESCAPE ROUTES:	off side of sentral a							
Entrance to ladderway on a Entrance to elevator on out								
				-				
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COMPARTMENT:	Sewage treatment Room						
FIRE:							
Ignition Sources / F	uel	Preventions (Note EX equipment)					
Consequences		Mitigations					
Risk	Risk Category:	ALARP?: Yes / No					
Rank:							
EXPLOSION:							
Ignition Sources / F	uel	Preventions (Note EX equipment)					
Consequences		Mitigations					
Risk Rank:	Risk Category:	ALARP?: Yes/No					
FLOOD:							
Hazards		Preventions					
TIGERIAS		Drains.					
		J. G.					
Consequences		Mitigations					
Risk	Risk Category:	ALARP?: Yes / No					
Rank:							
OTHER: Biological,	cnemical	Danier					
Hazards Exposure to pathoge		Preventions PPE					
Exposure to chemica	ns I	PPE					
Consequences Mitigations							
Possibility of injury to personnel		availability of MSDS Availability of medical treatment					
Risk 9 Rank:	Risk Category: Low	ALARP?: Yes					
RECOMMENDATION	NS:						

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Transoce	ean	RISI	K ASS	ESS	THAZARD MENT ORIZON			APPENDIX III
·								
COMPARTMENT	Shale Sh	aker Hous	e					
NAME: LOCATION:	2 nd Deck	Aft of Moo	nnool					
	X 7.5m Lower			m	MANNING: As I	Requi	red	
POWER / FLUID / COI					7.0	toqui		
120v, 480v, fire water, sea w Pot water rig air							_	
Shale Shaker control system Gumbo Box Motor Control S	s on aft bulkhead		_					
HVAC / DUCTING:								
Ventilation fan and ducts								
Fire dampers (FD-58 & FD-5 PASSIVE FIRE PROT								
Deck:	A-0	_		Dec	khead:	A-0		
Forward Bulkhead:	A-0					A-0		
Port Bulkhead:	A-0					A-60		
Comments / Recomm	andations.			Bull	khead:			
Comments / Recomm	ienuations							
FIRE/GAS DETECTIO	N:							
	Space	Duc	t				Space	Duct
Constant Manning					rocarbon Detector(s)	×	H
Flame Detector(s) Heat Detector(s)					Detector(s) er:		Ħ	
Smoke Detector(s)				0	or	-		
Comments / Recomm							_	
Heat Detectors #TSH-17230 H2S Detectors #TGD-17230		15LH						
Combustible Gas Detectors		&CGD-1723	15LH_					
FIRE FIGHTING EQUI	PMENT:	Casas	Adjad				Space	Adjacent
Dry Powder Extinguish	er(s)	Space	Aujat)]	CO ₂ Extinguisher	(s)	Space	
H ₂ O Extinguisher(s)	(5)			j	Foam	, ,		
					Extinguisher(s)			
Fixed H ₂ O (Deluge, Sp	rinklers,	s, 🛮 🖾 🔻 Fire Water Hose(s) 🔻 🗀 🔻						
etc.)					Fixed CO ₂		П	
Fixed Halon Other:		H	Г	1	I IXEU CO2			
Comments / Recomm	nendations			,			<u>-</u>	
DEVIOLON: 110	04						1405	OF
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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX	П
/ (I LIVE)//	•••

COMMUNICAT	IONS, ETC. :						
Telephone		CCTV	\boxtimes	PA Speaker	\boxtimes		
Fire Alarm Butto	on 🔲	Bilge Alarm		Emergency Lighting	\boxtimes		
GA Alarm Butto	n 🔲	General Alarm	\boxtimes	Other:			
Comments / Re	ecommendations	3					
Telephone #144							
ESCAPE ROUT	ES:						
Primary: Exit aft on	to Main Deck forward	of the Riser Storage, the	n port or stbd.				
Alternate: Exit forwa	rd into Moonpool area	, then to Main Deck.					
COMPARTMEN	T: Shale Shake	er House					
FIRE:							
Ignition Source	es / Fuel		Prevention	s (Note EX equipment)			
Electric wiring /s				maintenance and inspections			
Metal to metal of				procedures - gas handling			
Gas from the we				9			
IOIII GIO W							
Consequences			Mitigations		_		
	mage to equipme	nt/compartment	Firefighting	capabilities			
	ury to personnel	no companimon	Availability	of medical treatment including			
. 555.2.11.7 51 111	, to poroonnor		medivac				
Risk 9	Risk Cate	gory: Low		ALARP?: Yes			
Rank:	NISK Cale	gory. Low		ALAKI I. 103			
EXPLOSION:							
Ignition Source	oc / Fuel		Drovention	e (Note EV equipment)			
			Preventions (Note EX equipment) Preventive maintenance and inspections				
Electric wiring /s Metal to metal of							
Gas from the w			Well control procedures - gas handling				
Gas nom the w	en en						
Consequences			Mitigations				
	mage to equipme	nt/compartment	Firefighting capabilities				
	ury to personnel	nocompaninon	Availability of medical treatment including				
1 0001Dilley of ing	ary to personner		medivac				
			modivac				
Risk 9	Risk Cate	gory: Low		ALARP?: Yes			
Rank:	, was date	3,-		123			
FLOOD:							
Hazards			Prevention				
i iuzui us			Drains.				
			Dianis.				
Consequences			Mitigations				
					_		
Risk	Risk Cate	gory:		ALARP?: Yes / No			
Rank:		5 .,.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	icals / environme	ntal					
Hazards			Prevention	S			

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APPENDIX I

Exposure to drilling mud Loss/ spill of drilling fluids/mud				PPE Preventive maintenance and inspections				
Consequences				Mitigations				
Possibility	of injury to	personnel		Availability of MS	SDS/ medical	treatment		
Environme	ental impac	t .		Eyewash station and emergency shower				
	-			Spill response procedures				
Risk	20	Risk Category:	High		ALARP?:	Yes		
Rank:								
RECOMM	ENDATIO	NS:						

COMPARTMENT NAME:	Standby	Generator F	Room				
LOCATION:	Port main	deck, amic	Ishins				
	35x10 feet	doon, arm	Joinpo	MANNING:	0		
POWER / FLUID / CO	ONTROL LINES	:				•	
120v, 208v, 480v		_					
Lube oil storage tank							I
Fuel oil storage tank							
Rig air, drill water and	l potable water						
CONTROL SYSTEMS	S:						
Battery charger							
Buss tie Distribution panel							
Generator panel							
BOP UPS, IACS UPS							
HVAC / DUCTING:							
Ventilation ducting, Fire da	mpers #47 and #48	, Supply fan ar	nd damper co	ntrols outside sp	oace		
PASSIVE FIRE PRO	TECTION						
Deck:	A		Doo	khead:	A		
Forward Bulkhead:	A			Rileau. Bulkhead:	Ä		1
Port Bulkhead:	Ä			board	A-6	0	
FOIL DUIKHEAU.	^			head:	7-0	•	
Comments / Recom	mendations						
Stbd bulkhead adjoining pa	int locker is A-60						
FIRE/GAS DETECTION	ON:				_		
	Space	Duct				Space	Duct
Constant Manning			∤ Hyd	rocarbon Det	ector(s)	\	
Flame Detector(s)			H ₂ S	Detector(s)			
Heat Detector(s)			Oth	er:			
Smoke Detector(s)	\square						
Comments / Recom	mendations						
ASH17233, TSH1723	313						
FIRE FIGHTING EQUIPMENT:							
TINE FIGHTING EQ	JII MEN	Space /	Adjacent			Space	Adjacent
						'	'
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P		MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON				APPENDIX III			
Transocea	an								
7 1141130000		DE	EPWATE	K H	<u>URIZUN</u>				
Dry Powder Extinguisher	r(s)		1 \square		CO ₂ Exti	nguisher	(s)		. □
H ₂ O Extinguisher(s)	(3)				Foam	ngalono,	(0)		
		_	-		Extinguis	sher(s)		_	-
Fixed H ₂ O (Deluge, Sprii	nklers,				Fire Wat	er Hose(s	s)		\boxtimes
etc.)								_	
Fixed Halon					Fixed CO	O_2			
Other:			[]						
Comments / Recomme									
CO2 #146 & 147, Foam	#146A								
COMMUNICATIONS, ET	TC ·								
Telephone	<u> </u>	CCTV				PA Spe	aker		
Fire Alarm Button	×	Bilge Al	am		П	Emerge			ñ
GA Alarm Button		General			$\overline{\boxtimes}$	Other:	,	5	
Comments / Recomme	ndations								
									_
ESCAPE ROUTES:									
One door to main deck									
Che door to main deck									
COMPARTMENT: Sta	ndby Gene	rator Roo	m						
FIRE:		101011100							
Ignition Sources / Fuel				Pr	eventions	(Note E	X ea	uipment)	
Electric wiring/shorts								nd inspect	ions
Diesel, lube oil				Housekeeping					
spontaneous combustion	n of oily rag	s, oil pad	S	Pr	oper dispo	sal of oily	/ rag	s and pads	5
Consequences				Mı	tigations				
Risk R	isk Catego	orv:				ΔΙ Δ	ARP?	?: Yes/	No.
Rank:	ion outogo	.,.				/3.2/		1037	140
EXPLOSION:				_					
Ignition Sources / Fuel				Pr	eventions	(Note E	X eq	uipment)	
								<u> </u>	
Consequences				RA:	tiantiana				
- Olisedaciices				IVII	tigations				
	isk Catego	ory:				AL	ARP'	?: Yes/	No
Rank:									
FLOOD: Hazards									
nazatus				_	eventions ains.				
				DI	allis.				
Consequences			_	Mi	tigations				
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APPENDIX III

Risk Rank:	Risk Category:	:		ALARP?	: Yes/	No
OTHER: Electrical	shock					
Hazards			Preventions			
Contact with live en	ergy sources	_	Preventive mainter PPE, PTW, energy			ions
Consequences			Mitigations			
Possibility of injury Possibility of fatality			Availability of medi medivac	ical treat	ment incli	uding
Risk 15 Rank:	Risk Category:	Medium		ALARP?	: Yes	
RECOMMENDATION	ONS:					
						
COMPARTMENT NAME:		P Control Uni				
LOCATION:	3 rd Deck, P	ort side of mo				
	pprox. 5.5m x 11.5r	n	MANNING: I	ntermitte	ent 0-2	
POWER / FLUID / G	CONTROL LINES:					
120v, 480V, rig air, Hydraulic tanks, pumps	& piping, potable water.					
CONTROL SYSTE	MS:					
BOP controls and BOP t	est unit.					
HVAC / DUCTING:						
Ventilation and duc		, Fire Zone 15	i			
PASSIVE FIRE PR	OTECTION:					
Deck:	A-0		Deckhead:	A-0		
Forward Bulkhead: A-0 Port Bulkhead: A-0 Starboard A-0 Bulkhead: A-0 Bulkhead:						
	approx. 2m x 3m and is	contained within	this space.			
FIRE/GAS DETECT	_					
Constant Manning	Space	Duct	Hydrocarbon Detect	tor(s)	Space	Duct
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4		RISK ASSESSMENT						APPENDIX III	
Transocean	l	DEEPWATER HORIZO							
Flame Detector(s) Heat Detector(s) Smoke Detector(s)		□ □ H₂S Detector(s) □ □ Other:			-				
Comments / Recommenda ASH 172924, ASH 172927	tions								
FIRE FIGHTING EQUIPMEN	NT:								
Dry Powder Extinguisher(s) H ₂ O Extinguisher(s)		Space	Adjace	CO ₂ Extinguisher(Foam Extinguisher(s)			Space	Adjacent	
Fixed H₂O (Deluge, Sprinkle etc.) Fixed Halon	ers,				Fixed Co	er Hose(s	5)		
Other:Fire Axe					I IACU CX	J 2			
Comments / Recommenda	tions								'
COMMUNICATIONS, ETC.									
Telephone	<u>.</u>	CCTV				PA Spe	aker		\boxtimes
Fire Alarm Button		Bilge Alai				Emerge			\boxtimes
GA Alarm Button		General A	Alarm		\boxtimes	Other:			
Comments / Recommenda	tions								
ESCAPE ROUTES:									
Exit through the hatch into the	ne moo	n pool then	use the	sta	irs to the r	nain deck			
COMPARTMENT: Subsea	BOP	Control Uni	t						
FIRE:									
Ignition Sources / Fuel					eventions				
Electric wiring/shorts				Preventive maintenance and inspections					
Limited class A materials									
Consequences				Mi	tigations				
Possibility of damage to equ		/compartm	ent	Firefighting capabilities					
Possibility of injury to persor				Availability of medical treatment including					
BOP control possibly impact	ea			medivac Alternate means of BOP control (ROV					
Risk 15 Risk Rank:	Catego	ory: Med	ium	HIL	ervention)		RP?	: Yes	
EXPLOSION:									
Ignition Sources / Fuel				Preventions (Note EX equipment)					
Consequences				Mitigations					
									
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Risk Rank:	Risk Category:		ALARP?:	Yes / No		
FLOOD:				Mills		
Hazards		Preventions				
		Drains.				
Consequences		Mitigations				
Risk	Risk Category:		ALARP?:	Yes / No		
Rank:	Risk Category.		ALAKP?:	Yes / No		
OTHER:						
Hazards		Preventions				
Consequences		Mitigations				
Risk Rank:	Risk Category:		ALARP?:	Yes / No		
RECOMMENDATION	IS:					
			_			

COMPARTMENT	Subsea Tree Assembly Re	oom			
NAME:					
LOCATION:	Port side, Main deck				
DIMENSIONS: 2	2m x 12.5m x 17m h	MANNING: in	ntermittent		
POWER / FLUID / C	ONTROL LINES:				
Hydraulic lines for casing	conveyor, gantry crane, BOP test lines, R	ig air, 120v service lines.			
CONTROL SYSTEM	IS:				
Controls for BOP test, Aux	Drawworks, Gantry Crane, and BOP Tro	lley.			
HVAC / DUCTING:					
None					
PASSIVE FIRE PROTECTION:					
Deck:	A-0	Deckhead:			
Forward Bulkhead:		Aft Bulkhead:			
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APPENDIX II

Port Bulkhead:				Starboard Bulkhead:				
Comments / Recommen	dations							
FIRE/GAS DETECTION:								D
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s)	Flame Detector(s)		Hydrocarbon Detector(s) H ₂ S Detector(s) Other:		s)	Space	Duct	
Comments / Recommen	dations							
FIDE FIGURING FOURD								
FIRE FIGHTING EQUIPM	IENI:	Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(H₂O Extinguisher(s)	s)				Foam	nguisher(s)		
Fixed H₂O (Deluge, Sprinetc.)	klers,				Extinguis Fire Wate	er Hose(s)		
Fixed Halon Other:					Fixed CC	02		
Comments / Recommen	dations							
COMMUNICATIONS, ET								
Telephone Fire Alarm Button GA Alarm Button		CCTV Bilge Alar General A			☐ PA Speaker ☐ Emergency Lighting ☐ ☐ Other: ☐			
Comments / Recommen	dations		- I			<u> </u>		
ESCAPE ROUTES:								
Door aft to main deck, door port	fwd to main o	deck. The "g	arage do	ors" f	vd and port a	re usually open.		
COMPARTMENT: Subs	sea Tree A	ssembly F	Room					
FIRE:								
Ignition Sources / Fuel				Pr	eventions	(Note EX eq	uipment)	
Consequences	Consequences				Mitigations			
	sk Catego	ry:				ALARP?	P: Yes/N	0
Rank:								
EXPLOSION: Ignition Sources / Fuel				Dr	eventions	(Note EX eq	uinment)	
.g 000100071 del				1.,	- 7011110113	THORE EX GY	aipirioritj	

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Consequences		Mitigations	_
Consequences		Miligations	
Risk Rank:	Risk Category:		ALARP?: Yes / No
FLOOD:			
Hazards		Preventions	
	_	Drains.	
Consequences		Mitigations	
Risk Rank:	Risk Category:		ALARP?: Yes / No
OTHER: Environmen	ntal		
Hazards		Preventions	
Hydraulic leak		Preventive main	tenance and inspections
Consequences		Mitigations	
Possible environmenta	al impact	Spill response pr	rocedures
1 033ible chiviloniment		Use of envronme	entally friendly fluids
Risk 9 Rank:	Risk Category: Low		ALARP?: Yes
RECOMMENDATION	S:		

COMPARTMENT N	IAME: Subsea Works	shop		
LOCATION:	2 nd deck port	side of moon pool		
DIMENSIONS: 7.6	60m x 2.60m	MANNING:	As Required	
POWER / FLUID / G	CONTROL LINES:			
120v, pot water, drill water	er, fresh water, rig air			

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CONTROL SYSTEMS:							
A/C unit for space located in electricians shop							
HVAC / DUCTING:							,
Ventilation ducts		111					
PASSIVE FIRE PRO	TECTIO	V:					
	A-0		Deckhe	ad:	A-0		
Forward	A-0		Aft Bulk	head:	A-0		
Bulkhead:			01.1				
Port Bulkhead: / Comments / Recom	A-0	one	Starboa	rd Bulkhe	ad: A-0		
Comments / Recon	menuau	Olis					
FIRE/GAS DETECT	ION:						
	Space	Duc	- 1			Space	Duct
Constant Manning					Detector(s)		
Flame Detector(s) Heat Detector(s)		ᅥ		Detector(s r:			
Smoke Detector(s)		H					
Comments / Recon	mendati	ons					
ASH 172923							
FIRE FIGHTING EQUIPMENT:							
rike fighting EQ	CIPMEN	Γ:					
		Space	Adjacent			Space	Adjacent
Dry Powder Extingui			Adjacent	CO ₂		Space	Adjacent
Dry Powder Extingui				Extingui	isher(s)		
			Adjacent	Extingui Foam		Space	Adjacent
Dry Powder Extingui				Extingui Foam Extingui			
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.)				Extingui Foam Extingui	isher(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon				Extingui Foam Extingui	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.)				Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon	sher(s)	Space		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other:	sher(s)	Space		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s)		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space Gradient Space Gradien		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s) O ₂		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments / Recomments / Recomments Telephone Fire Alarm Button GA Alarm Button	sher(s)	Space GOTV Bilge Alarr General Alarr		Extingui Foam Extingui Fire Wa	isher(s) ter Hose(s) O ₂ PA Speake Emergency		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space GOTV Bilge Alarr General Alarr		Extingui Foam Extingui Fire Wa	PA Speake Emergency Lighting		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space GOTV Bilge Alarr General Alarr		Extingui Foam Extingui Fire Wa	PA Speake Emergency Lighting		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space GOTV Bilge Alarr General Alons	m lamn	Extingui Foam Extingui Fire Wa Fixed C	PA Speake Emergency Lighting Other:		
Dry Powder Extingui H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, Sprinklers, etc.) Fixed Halon Other: Comments / Recomments	sher(s)	Space General Alons	m larm	Extingui Foam Extingui Fire Wa Fixed C	PA Speake Emergency Lighting Other:	you out ir	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

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APPENDIX III

COMPARTMENT:	Subsea Workshop					
FIRE:						
Ignition Sources / F	uel	Preventions (Note EX equipment)				
Electric wiring/shorts		Preventive maintenance and inspection				
Fiammable aerosols		Proper storage of flammables				
		Ì				
Consequences		Mitigations				
Possibility of damage	to equipment/compartment	Firefighting capa				
Possibility of injury to	personnel	Availability of medical treatment including				
		medivac				
Risk 9	Risk Category: Low		ALARP?: Y	es es		
Rank:						
EXPLOSION:						
Ignition Sources / Fuel		Preventions (N	ote EX equipme	ent)		
Consequences		Mitigations				
Consequences		Willigations				
Risk	Risk Category:		ALARP?: Y	es / No		
Rank:						
FLOOD:						
Hazards		Preventions				
		Drains.				
		B d t d t a a d t a a a a a a a a a a a a				
Consequences		Mitigations				
İ						
Risk	Risk Category:		ALARP?: Y	res / No		
Rank:	Risk Calegory.		ALAKP?:	es/No		
OTHER:				V V V		
Hazards		Preventions				
nazarus		Fievendons				
Consequences		Mitigations				
- Consequences		minganons				
Risk	Risk Category:		ALARP?:	res / No		
Rank:	The outegory.			. 557140		
RECOMMENDATION	IS:					

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APPENDIX II	AF	PE	ND	lΧ	П
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Consider the installation of an approved flammables storage locker for this space

COMPARTMENT	480V Swi	tchboard	Room	(Por	t)			
NAME:	Onetaille	- 40 000	D1- F					
LOCATION: DIMENSIONS: 8m X 9i		e Απ 2	реск, г	orwa	rd of ECR MANNING: As	s requi		
POWER / FLUID / CONTRO		·			MANNING: A	requi	ea	
120v, 208v, 230v, 480v	OL LINES	·						
Fire water								
CONTROL SYSTEMS:								
NDU A-3 (181037)								
Process Station #29 (181029) 480V Feeder Panels								
120V Normal Power Panel (23604	7)							
120V Standby Panel (236096)								
HVAC / DUCTING:								
Ventilation ducting	70 ED 70 E	D 04 CD 0	e ED 00	,				
Fire Dampers (FD-71, FD-72, FD- PASSIVE FIRE PROTECTI		D-04, PD-0	6, FD-66)				
Deck: A-6				Dec	khead:	A-60		
Forward Bulkhead: A-0	-				Bulkhead:	A-0		
Port Bulkhead: A-6					rboard	A-60		
				Bull	khead:			
Comments / Recommenda	ations							
FIRE/GAS DETECTION:								
0	Space	Du	ict				Space	Duct
Constant Manning	님	1 -	٦		rocarbon Detecto	r(s)	님	
Flame Detector(s) Heat Detector(s)	님	<u> </u>	=		Detector(s)	- 1	뉘	
Smoke Detector(s)	Ħ	-	╡	Otti	er:	- 1	لبا	
Comments / Recommenda	ations							
Smoke Detector #ASH-172523								
FIRE FIGHTING EQUIPME	NT:							T - 1
Day Day day Entire wish a vish		Space	Adjac	ent	00 5 11 - 1 1 -		Space	Adjacent
Dry Powder Extinguisher(s)		닏		1	CO ₂ Extinguishe	er(s)		
H ₂ O Extinguisher(s)		\sqcup		ı	Foam			
Fixed H.O (Doluge, Sprinkle	orc		l		Extinguisher(s)	(6)		
Fixed H ₂ O (Deluge, Sprinkle etc.)	CI 5,				Fire Water Hose	(8)		
Fixed Halon					Fixed CO ₂		\boxtimes	
Other:				1			<u> </u>	
Comments / Recommenda	ations							
DEMISION NO.								

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APPENDIX I	H
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COMMUNICATIONS,	ETC.:				
Telephone		CCTV		PA Speaker	
Fire Alarm Button		Bilge Alarm		Emergency Lighting	
GA Alarm Button		General Alarm	\boxtimes	Other:	
Comments / Recomi	nendations				
Telephone #271					
ESCAPE ROUTES:	Tauray than an to	FCP			
Primary: Exit Stbd to Passa Alternate: Exit aft to 11kV S	Switchboard Room	(Port)			
COMPARTMENT: 4	80v Switchbo	ard Room Port			
FIRE:		<u></u>			
Ignition Sources / Fr	iel			s (Note EX equipment)	
Electric wiring/shorts			Preventive n	naintenance and inspections	
Consequences			Mitigations		
Possibility of damage to equipment compartment			Firefighting	capabilities	
Possibility of injury to personnel			Availability of medivac	of medical treatment including	
Risk 15	Risk Catego	ry: Medium		ALARP?: Yes	
Rank:		,			
EXPLOSION:					
Ignition Sources / Fuel			Preventions (Note EX equipment)		
Consequences			Mitigations		
Risk	Risk Catego	ory:		ALARP?: Yes / No	
Rank:					
FLOOD:					
Hazards			Prevention	s	
			Drains.		
Consequences			Mitigations		
Risk	Risk Catego	ory:	_	ALARP?: Yes / No	
Rank:					
OTHER: Electrical sl	nock				
Hazards			Prevention	s	

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APPENDIX III

Contact with live energy sources			Preventive maintenance and inspections PPE, PTW, energy isolation			
Consequences				Mitigations		
Possibility	of injury to	personnel		Availability of hig	h voltage Pl	PE
Possibility of fatality		Availability of medical treatment including medivac		ent including		
Risk	15	Risk Category:	Medium		ALARP?:	Yes
Rank:						
RECOMM	ENDATIO	NS:				
Consider the provision of high voltage PPE for this space						
COMPAR		Thruster 5 le		<u> </u>		

COMPARTMENT	Thruster 5 lower space								
NAME:									
LOCATION:	Stbd aft pontoon, 0 level								
DIMENSIONS: 11r	n X 9m	MANNING: As R	equired						
POWER / FLUID / CO	ONTROL LINES:								
120v, 480v, 11kv									
Sea water, hydraulic fluid,	Sea water, hydraulic fluid, lube oil, rig air								
CONTROL SYSTEM									
	W Service pump no 7, Thruster SW coolin	ng pump no 5,							
Lube oil drain pump Thruster azimuth gear, thre	uster shaft								
, do.o. dz.,									
HVAC / DUCTING:									
One fire damper near botto damper no. XV-172343 sin	om of hull, fwd inboard tag no XV-172344.	If this is closed, so must be th	e upper thruster s	space fire					
PASSIVE FIRE PRO	TECTION:								
Deck:	A-0	Deckhead: C	,						
Forward Bulkhead:	A-0	Aft Bulkhead: A	·-O						
Port Bulkhead:	A-0	Starboard A	·-O						
		Bulkhead:							
Comments / Recom									
(Find out what's on the oth	er side of the bulkheads in this space)								
FIRE/GAS DETECTI									
	Space Duct		Space	Duct					
Constant Manning		Hydrocarbon Detector(s)						
Flame Detector(s)		H ₂ S Detector(s)	-	1 4					
Heat Detector(s)		Other:							
Smoke Detector(s)									
Comments / Recommendations Smoke Detector: ASH-172D11									
Sinoke Detector. ASH-172	D11								
FIRE FIGHTING EQUIPMENT:									
	Space Adjace	ent	Space	Adjacent					
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	DEE! WATE	TO TO TO TO					
Dry Powder Extinguisher(s) H ₂ O Extinguisher(s)		CO ₂ Extinguis					
Fixed H ₂ O (Deluge, Sprinklers	s, 🗆	Extinguisher(s Fire Water Ho					
Fixed Halon Other:		Fixed CO ₂ on thruster me	otor	\boxtimes			
Comments / Recommendations Fire ext : no. 12							
COMMUNICATIONS, ETC. :							
Telephone	□ CCTV	⊠ PA	Speaker				
Fire Alarm Button GA Alarm Button	Bilge Alarm General Alarm	☐ Em	ergency L	Combustible			
Comments / Recommendat	ions						
PA Speaker: SPK-174428							
ESCAPE ROUTES:		· -					
Only one route: Use ladder at	outboard bulkhead, ther	exit through forwa	rd bulkhe	ad watertigh	t door.		
COMPARTMENT: Thruster	5 lower space						
FIRE:							
Ignition Sources / Fuel		Preventions (No					
Electric wiring /shorts		Preventive mainte	nance an	d inspection	าร		
Pumps/motor overheating		Housekeeping					
Lube oil, hydraulic oil		Monitoring of equ	pment				
Consequences		Mitigations					
Possibility of damage to equip	oment /compartment	Firefighting capab	ilities Fixe	ed CO2 syst	em for		
Thruster 5 inoperable; loss of		thruster motor. Re					
Possibility of injury to personr		Availability of medical treatment including medivac			ng		
Risk 9 Risk 0 Rank:	category: Low		ALARP?	: Yes			
EXPLOSION:							
Ignition Sources / Fuel		Preventions (No					
Electric wiring /shorts		Preventive mainte	enance ar	nd inspection	าร		
Pumps/motor overheating		Housekeeping					
Lube oil, hydraulic oil	Monitoring of equipment						
Consequences Mitigations Possibility of damage to equipment /compartment Firefighting capabilities Fixed CO2 system for							
Possibility of damage to equip		Firefighting capate thruster motor. Re	mote ver	ed CO2 syst	em for		
Thruster 5 inoperable; loss of Possibility of injury to person		Availability of med					
Risk 9 Risk (Category: Low	ilicultuo	ALARP?	Yes			
Rank:	g,						
FLOOD:					_		
Hazards		Preventions					

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			Doubles issessin		and the section			
Thruster Seals			Routine inspection of space and thruster					
Salt water piping			components and remote monitoring of equipment.					
Consequences			Mitigations					
	e; loss of positioning i	redundancy	Sump pump					
	5,							
				AL ADDO				
Risk 15	Risk Category:	Medium		ALARP?:	Yes			
Rank:								
OTHER: Electrical s	hock							
Hazards			Preventions					
Contact with live end	ray sources		PTW, energy isolation, PPE					
	· ·	,	Preventive maintenance and inspections					
			, , , , , , , , , , , , , , , , , , ,					
Concomionaca			Mitigations					
Consequences								
Possibility of injury to	personnel		Availability of medical treatment including					
Possibility of fatality			medivac					
Risk 15	Risk Category:	Medium		ALARP?:	Yes			
Rank:								
RECOMMENDATIO	NS:							
	he ladder from the lo	wer space so	that it extends ah	ove the deck	in the unner space			
		wei space so	that it exterius ab	ove the decr	in the upper space			
so hook up can be n	iade more safety.							

COMPARTMENT	Thruster #5: Upper Space		
NAME:			
LOCATION:	Stbd Aft pontoon, 5.1m lev	el	
DIMENSIONS: 11m X	9m	MANNING:	As-required
POWER / FLUID / CONT	ROL LINES:		
120v, 480v, 11kv			
Fresh water, sea water, rig air, l	nydraulic lines		
CONTROL SYSTEMS:			
	muth steering. Shut off located near t		
	brake panel Thruster jacking tubes (f		ng of thrusters)
480 v receptacie switch; Located	d aft bulkhead, inboard behind thruste	er motor.	
HVAC / DUCTING:			
One fire damper XV:172343, en	ters space over watertight door. Refe	er drawing: HRBS-H68	-000-H1010
PASSIVE FIRE PROTEC	TION:		
Deck: C		Deckhead:	A-0
Forward Bulkhead: A	-0	Aft Bulkhead:	A-0
Port Bulkhead: A	-0	Starboard	A-0
		Bulkhead:	

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Comments / Recommendations Note: 01/17/02 Refrigerant tanks are stacked against the aft bulkhead in the 5.1m vestibule. The other side of this bulkhead in the thruster 5 forward bulkhead. Danger of explosion of pressure vessels by conduction through Thruster 5 upper space fwd bulkhead.									
FIRE/GAS DETECTION	ON:								
Constant Manning Flame Detector(s) Heat Detector(s) Smoke Detector(s) Comments / Recomments		Hydrocarbon Detect H ₂ S Detector(s) Other:			(s)	Space	Duct		
Smoke detector: ASH	H-172D10								
FIRE FIGHTING EQU	IPMENT:								
Dry Powder Extinguis H ₂ O Extinguisher(s) Fixed H ₂ O (Deluge, S etc.)	her(s)	Space	Adjace	ent	Foam Extinguis	nguisher sher(s) er Hose(s		Space	Adjacent
Fixed Halon Other:					Fixed CO	O_2		\boxtimes	
Comments / Recommendations Fixed CO2 services Thruster motor. It is activated at the bottle, located aft bulkhead behind thruster motor. The CO2 extinguisher is located on the ladder railing to the lower thruster space. Fire ext. is number 42									
COMMUNICATIONS	ETC.:								
Telephone			☐ PA Speaker ☐ ☐ Emergency Lighting ☐ ☐ Other:Toxic/Combustible ☐ ☐ gas alarm buttons.						
Comments / Recommendations Manual call pt: XS-172D09Speaker: SPK-174427									
ESCAPE ROUTES: The only escape route	e from the thru	ster space	is throu	ah t	he upper s	space wa	tertia	ht door. fw	d bulkhead
	Thruster #5 Up								
FIRE:	Till dotter in o op	рог ориос							
Ignition Sources / Fu	ıel			Pr	eventions	(Note E	X equ	ipment)	
Electric wiring/shorts Hydraulic fluid			Preventive maintenance and inspections						
Consequences Possibility of damage to equipment /compartment. Thruster 5 inoperable; loss of positioning redundancy Possibility of injury to personnel		Mitigations Firefighting capabilities. Fixed CO2 extinguisher for thruster motor. Availability of medical treatment including medivac							
Risk 9 Rank:	Risk Catego	Risk Category: Low			ALA	ARP?	': Yes		
EXPLOSION:									
Ignition Sources / Fuel			Pr	eventions	(Note E	X equ	uipment)		
Consequences				Mi	tigations				
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Risk	Risk Category:		ALARP?: Yes / No			
Rank:	Kisk Category.		ALAKTI 1037 NO			
FLOOD:						
Hazards		Preventions				
	a chest to skin valve, cooling		tenance and inspections			
piping, ballast tank lin		T TOVOTRIVE ITIAITS	teriance and inspections			
piping, banasi tank iin	c3, ctc.					
Consequences		Mitigations				
Thruster 5 inoperable; loss	of positioning redundancy	Sump pump in lo	ower thruster space.			
		'''	·			
			1			
Risk 15	Risk Category: Medium		ALARP?: Yes			
Rank:						
OTHER: Struck by/ca	aught between					
Hazards		Preventions				
Sliding watertight doo	г	Audible and visual alarms on operation				
		Training in operation of doors				
		Restricted access				
Consequences		Mitigations				
Possibility of injury to	personnel	Remote indication for doors				
Possibility of fatality	-	Notification to CCR when entering space				
		Availability of medical treatment including				
		medivac				
Risk 15	Risk Category: Medium		ALARP?: Yes			
Rank:						
RECOMMENDATION	S:					
_						

COMPARTMENT	Transformer Room Stbd			
NAME:	nd			
LOCATION:	2 nd deck, stbd accommodation	, outboard of l	Ory Store	
DIMENSIONS: Ap	prox. 5m x 3m	MANNING:	0	
POWER / FLUID / CO	ONTROL LINES:			
Rig air, Power Cables for 1	1kV and 480V transformers			
CONTROL SYSTEM	S:			
Controls for Transformers,	lighting and power breaker panels, local damp	er controls.		
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APPENDIX I	II
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HVAC / DUCTING:									
Ventilation ducts									
Fire Dampers FD-38 & FD-	39, Fire Zone #10								
PASSIVE FIRE PRO	TECTION:								
Deck:	A-0			Dec	khead:		A-0		
Forward Bulkhead:	A-0				Bulkhead:		A-0		
Port Bulkhead:	A-0				rboard		B-30		
Bulkhead:									
Comments / Recommendations									
FIRE/GAS DETECTION	ANI.								
FIRE/GAS DETECTION									T D4
Constant Manning	Space	Du	Ct			D-44	,_\	Space	Duct
Constant Manning		\ _	-		Irocarbon		(S)	닏	1 4 1
Flame Detector(s)	! 닏	-	4		Detector			\sqcup	1 1 1
Heat Detector(s)		\ <u>\</u>	-	Oth	er:		_	Ш	
Smoke Detector(s)	<u> </u>								
Comments / Recomments		·05							
Smoke Detectors #ASH-17	2604 & ASH-1726	805							
FIRE FIGHTING EQU	IIDMENT:								
TIKE HOTHING EQU	ALLIAT.	Space	Adjac	ont				Space	Adjacent
Dr. Bouder Extinguis	hor(c)	Space	Aujat	CIIL	CO E	inauichor	(a)	Space	Aujacent
Dry Powder Extinguis H ₂ O Extinguisher(s)	rier(s)		l ⊨			inguisher	(S)		1 1 1
H ₂ O Extinguisher(s)			└	l	Foam	ob o =/o)			
Fixed U.O. (Dalues of	Extinguisher(s)			_、		52			
Fixed H ₂ O (Deluge, S	prinkiers,	ļШ	☐ Fire Water Hose(s				s)	\	
etc.)									
Fixed Halon		Fixed CO ₂				\mathcal{O}_2			
Other:									
Comments / Recomi	nendations								
COMMUNICATIONS	ETC ·								
COMMUNICATIONS	, <u>E 1 C</u>	COTY				DA 0	-1		
Telephone	님	CCTV			님	PA Spe			닏
Fire Alarm Button	님	Bilge Alar			님	Emerge	ncy L	_ignting	片
GA Alarm Button		General A	lami_			Other:			
Comments / Recomi	nendations								
ESCAPE ROUTES:									
Fwd door leads directly to f	and lifeboat deck								
I wa door leads directly to t	wa mebaat deck.								
COMPARTMENT		- 011							
	Transformer R	oom Stbd							
FIRE:									
Ignition Sources / Fuel Preventions (Note EX equipment)									
Electric wiring/shorts Preventive maintenar			ice ar	nd inspecti	ons				
				ì					
Consequences Mitigations									
Possibility of damage	to equipment/	compartm	ent	Fir	refighting of	capabilitie	es		
Possibility of injury to								ment inclu	ding
	-				edivac				-
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Risk 13 Rank:	Risk Category: Medium		ALARP?:	Yes	
EXPLOSION:					
Ignition Sources / Fu	iel	Preventions (No	te EX equip	ment)	
		,		,	
Consequences		Mitigations			
Risk	Risk Category:		ALARP?:	Yes / No	
Rank:					
FLOOD:					
Hazards		Preventions			
		Drains.			
Consequences		Mitigations			
Risk	Diale Octobrance		ALARP?:	Yes / No	
Rank:	Risk Category:		ALAKP?:	Yes / No	
OTHER: Electrical sh	nock		·		
Hazards	iock	Preventions			
Contact with live energy sources		Preventive maintenance and inspections PPE, PTW, energy isolation			
Consequences		Mitigations			
Possibility of injury to personnel		Availability of high voltage PPE			
Possibility of fatality		Availability of medical treatment including medivac			
Risk 15 Rank:	Risk Category: Medium		ALARP?:	Yes	
RECOMMENDATION					
Consider providing high voltage PPE for this space. Also consider the placement of a sign detailing the steps to take in an electrical shock situation					

COMPARTMENT	No. 4 Upper and Lower Pump Room
NAME:	·
LOCATION:	Port Forward Column

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APP	END	IX II
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DIMENSIONS: 564.5 m	13				MANNIN	G: As requi	red	
POWER / FLUID / CONT	ROL LINE	S:						
120v, 480v, seawater, ballast bil	ge							
Drill water, hydraulic rig air								
CONTROL SYSTEMS:								
Sea Water Service Pump Numb	er 3 (Lower)	(Feeds Seav	water and	Fire S	System).			
Ballast Pump No. 1 (Lower) Strip	oping Pump i	No. 1 (Upper)) Bilge Pu	mp N	o. 1 / Sump	Pump No. 1		
HVAC / DUCTING:								
Supply Fan SF-35 Inlet Valves					m) / XV 172	316 (From #7 Lov	ver Thr. Room) Exhaust Fan
EF-43 Exhaust Duct Valves XV							435-1 4b b -	
Number 7 Upper Thruster Room exhaust fans.	contains PA	C-13&14 Air	Condition	ning U	nit which rec	irculates the air u	tilizing the abo	ve supply and
PASSIVE FIRE PROTEC	TION:							
Deck: A				Dec	khead:			
Forward Bulkhead: A	-0				Bulkhead:	A-0		
Port Bulkhead: A-	-0			Sta	rboard	A-0		
·				Bul	khead:			
Comments / Recommen								
Space is open to 28.5 m flat at p	enetration of	Bulk Tanks	and Pipin	g. Co	lumn Outer E	Belt surrounds the	lower 2 meter	s of the space,
then serves as outer hull. Deck	is tank top to	r potable wa	ter and ba	ise oil	tanks.			
FIRE/GAS DETECTION:								
	Space	Du	ıct				Space	Duct
Constant Manning				Hyc	Irocarbon	Detector(s)	<u> </u>	
Flame Detector(s)]	H ₂ S	Detector	(s)		
Heat Detector(s)]	Oth	er:			
Smoke Detector(s)			_					
Comments / Recommen								
FIRE FIGHTING EQUIPM	ENT:							
		Space	Adjac	ent			Space	Adjacent
Dry Powder Extinguisher(S)		1 1			nguisher(s)		🛛
H ₂ O Extinguisher(s)			1 –		Foam	- h ()		
Fixed U.O. (Deluge, Sprint	klore				Extinguis	sner(s) er Hose(s)		
Fixed H ₂ O (Deluge, Sprint etc.)	KICIS,	1 '			File vval	ei nuse(s)		
Fixed Halon					Fixed CO	٦.		
Other:					I IXEU CO	J ₂		
Comments / Recommen	dations							_
COMMUNICATIONS, ET								
Telephone		CCTV			\boxtimes	PA Speaker		\boxtimes
Fire Alarm Button XS172C08	\boxtimes	Bilge Ala	m			Emergency		\boxtimes
GA Alarm Button	fi l	General /			⊠	Other:		
Comments / Recommen	dations							
No sound powered phone		pump rooi	m					
ESCAPE ROUTES: wate								
Possible to pass from for							and Numb	er 7
Thruster Room through w	ater tight of	door in low	er level	of th	ie pump ro	om		

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	Number 4 Upper and Lower Pur	пр кооп			
FIRE:					
Ignition Sources / Fuel		Preventions (Note EX equipment)			
Electric motors overheating Electric wiring /shorts		Preventive maintenance and inspection Housekeeping			
Hydraulic fluid					
Consequences		Mitigations			
Bilge Fire / Possible I Possibility of injury to	oss of pump room. personnel	Firefighting capabilities Availability of medical treatment including medivac			
Risk 9 Rank:	Risk Category: Low		ALARP?: Yes		
EXPLOSION:					
Ignition Sources / F	uel	Preventions (N	ote EX equipment)		
N/A			_		
Consequences		Mitigations			
Risk Rank:	Risk Category:		ALARP?: Yes / No		
FLOOD:					
Hazards		Preventions			
Line rupture / valve fa	ailure	Preventive main	tenance and inspections		
Consequences		Mitigations			
	Extreme flooding would cause		nd bilge capabilities		
loss of ballast pumps in one quadrant and valve indication. Effect on stability.		Training in damage scenarios			
Risk 9 Rank:	Risk Category: Low		ALARP?: Yes		
OTHER:					
Hazards		Preventions			
Sliding watertight door		Audible and visual alarms on operation Training in operation of doors Restricted access			
Consequences		Mitigations			
Possibility of injury to personnel Possibility of fatality		Remote indication for doors Notification to CCR when entering space Availability of medical treatment including medivac			
Risk 15 Rank:	Risk Category: Medium		ALARP?: Yes		

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RECOMMENDATION	IS:	· .						
COMPARTMENT NA	ME: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	house	· · · · · · · · · · · · · · · · · · ·					
LOCATION:		ck stbd mid						
DIMENSIONS: 10m		OK OLDU III.G		MANNIN	G:	man		
POWER / FLUID / CO			_					
120v, 480v, drill water, sea	water, rig air, diesel							
CONTROL EVETEN	<u> </u>							
CONTROL SYSTEMS) :							
								1
HVAC / DUCTING:						-		
Fire dampers #46 and	l #39,							
PASSIVE FIRE PRO	rection:							
Deck:	A-0		De	ckhead:		A-0		
Forward Bulkhead:	A-0		Aft	Bulkhead:		A-0		
Port Bulkhead:	A-0			rboard		A-0		
0			Bul	khead:				
Comments / Recomi	nendations							
FIRE/GAS DETECTION								
TIKE OAG BETEGTK	Space	Duct					Space	Duct
Constant Manning				drocarbon		tor(s)		
Flame Detector(s)				S Detector(
Heat Detector(s)			Oth	ner:				
Smoke Detector(s) Comments / Recomments	mendations							<u> </u>
Comments / Recoim	nenualions							
FIRE FIGHTING EQU	JIPMENT:	Space Ad	jacent	1			Space	Adjacent
Dry Powder Extinguis	her(s)	Space Au		CO ₂ Exti	nauisl	ner(s)		
H ₂ O Extinguisher(s)	1101(0)			Foam		(-,		
				Extinguis				
Fixed H ₂ O (Deluge, S	prinklers, etc.)			Fire Wat		se(s)		
Fixed Halon				Fixed CO) ₂		Ы	
Other: Comments / Recomments	mendations							
Comments / Recomm	mendadons							
COMMUNICATIONS					,			
Telephone		CCTV				Speake		
Fire Alarm Button		Bilge Alarm			Eme	rgency	Lighting	\boxtimes
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APPENDIX	ш
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GA Alarm Button	General Ala	ım 🛛	Othe	r:		
Comments / Recom	mendations					
ESCAPE ROUTES:						, , , , , , , , , , , , , , , , , , ,
	ce, take a right, go through the	accommodations fol	llowir	ng the ex	rit sians	which will
lead you outside unde	erneath the fwd lifeboat station.	Take ladder way to	lifeb	oat static	on On	3 14111011 14111
	Warehouse		-			
FIRE:	vyarenouse					
Ignition Sources / F	uel	Preventions (No	te F)	X equipm	nent)	
Electric wiring/shorts		Preventive mainte				ons
Class A materials		Housekeeping			,	
Flammable aerosols/	greases, solvents, etc	Proper storage of	f flam	nmables		
Consequences		Mitigations				
Possibility of loss of it	nventory/damage to	Firefighting capat				
compartment		Availability of med	dical	treatme	nt inclu	aing
Possibility of injury to		medivac				
Risk 15	Risk Category: Medium		ALA	ARP?:	Yes	
Rank:						
EXPLOSION:		Preventions (No	to 5	V agrida-	20n4l	
Ignition Sources / F	uei	Preventions (NO	ne E	k equipri	ient)	
Consequences		Mitigations				
		1				
B'-l-	T					
Risk	Risk Category:		ALA	ARP?:	Yes / I	No
Rank: FLOOD:						
Hazards		Preventions				
Tidzarus		Drains.			_	
		Diams.				
				_		
Consequences		Mitigations				
Risk	Risk Category:		ΔΙΛ	RP?:	Yes / I	No.
Rank:	lask outegory.		~L/	WAT I.	163/1	40
OTHER:						
Hazards		Preventions				
Consequences		Mitigations				
					_	
DEVICION NO	04				_	
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		_				
Risk	Risk Category	•	Δ1 Δ	ARP?:	Yes / N	lo.
Rank:	Trion outegory	•	7.27		10371	
RECOMMENDATION	is:				-	
COMPARTMENT	Watermak	er Room #2 Po	nt (typical)			
NAME:	Valeillak	ei 1(00iii #2 i-0	it (typical)			
LOCATION:		t, behind engin				
	orox. 8.5m x 4m		MANNING: 0			
POWER / FLUID / CO						
120v, 11kv, sea water, air,	fresh water oil					
CONTROL SYSTEM		1001				
Controls for the jacket water	er preheater, #2 eng	MCC transformer co	ontrols and start air compresso	or.		
LINAG / DUGTING:						
HVAC / DUCTING: Fire zone 26						
Fire zone 26						
PASSIVE FIRE PRO	TECTION:					
Deck:	A-0		Deckhead:	A-60		_
Forward Bulkhead:	None		Aft Bulkhead:	A-0		
Port Bulkhead:	A-60			A-60		
			Bulkhead:			
Comments / Recom		_				
Forward end of space is or	oen to engine room #	2				
FIRE/GAS DETECTION						
	Space	Duct	Lhudas as share Data -t		Space	Duct
Constant Manning			Hydrocarbon Detector	(S)	님	
Flame Detector(s)		│ 片	H ₂ S Detector(s)		H	
Heat Detector(s)		H	Other:	-		
Smoke Detector(s) Comments / Recom						
ASH 172909	menuations					
A311172909						
FIRE FIGHTING EQU	JIPMENT:					
		Space Adjac			Space	Adjacent
Dry Powder Extinguis	sher(s)		CO ₂ Extinguisher	(s)	\bowtie	
H ₂ O Extinguisher(s)			Foam			
			Extinguisher(s)	٥,		
Fixed H ₂ O (Deluge, S	sprinklers,		Fire Water Hose(5)		
etc.)			1			<u> </u>
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		MAJOR ACCIDENT HAZARD RISK ASSESSMENT				APPENDIX III		
/ Transoc	ean		ER HORIZON					
Fixed Halon Other:			Fixed CO	O_2				
Comments / Recom	mendations							
Comments / Recom	mendations							
COMMUNICATIONS								
Telephone	\boxtimes	CCTV		PA Spe		\boxtimes		
Fire Alarm Button GA Alarm Button	\bowtie	Bilge Alarm General Alarm		Cther: s	ncy Lighting ound powered	X		
GA Alaini Bullon	Ц	General Alaini		telepho				
Comments / Recom	mendations							
			•					
ESCAPE ROUTES:								
Out port side door to	ER 1, fwd to s	piral stairway to 2 nd	deck in ER 1	, aft throu	gh door , stain	way to main		
deck.								
COMPARTMENT:	Watermaker R	coom						
Ignition Sources / F	uel		Preventions	(Note E	X equipment)			
Electric wiring/shorts					ce and inspec	tions		
Lube oil			Housekeepir	ng				
Consequences			Mitigations					
Possibility of damage	to equipment		Firefighting of					
Possibility of injury to	personnel		Availability of medical treatment including medivac					
Risk 9 Rank:	Risk Catego	ory: Low		ALA	ARP?: Yes			
EXPLOSION:								
Ignition Sources / F	uel		Preventions	(Note E	X equipment)			
Consequences			Mitigations					
			magations					
Risk	Risk Catego	ory:		AL	ARP?: Yes /	No		
Rank: FLOOD:								
Hazards			Preventions					
Hazarus			Drains.					
Consequences			Mitigations					
			magadons					
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Risk	Risk Category	:		ALARP	?: Yes/I	No			
Rank:	16								
OTHER: Chemicals, burns, electrical shock									
Hazards			Preventions						
Exposure to hot surfa			PPE						
Exposure to chemica			PTW, energy isola	ition					
Exposure to live ener	gy sources								
Consequences			Mitigations						
Possibility of injury to	personnel		Availability of MSE			al:			
Possibility of fatality Availability of medical treatment including medivac									
Risk 15 Rank:	Risk Category	: Medium	•	ALARP	?: Yes				
RECOMMENDATION	NS:								
COMPARTMENT		hon							
NAME:									
LOCATION:	Second De	ck, Port Side, I	Frame 6 to 9.2						
	7' x 22.5' x 11.5'	,, .		1					
POWER / FLUID / C		_		·	_				
CONTROL SYSTEM Four Welding Machir		ding outlets.							
HVAC / DUCTING:	·								
Exhaust vent (2630cfm) de Fuel Oil Room – Exhaust (edicated to space with (6138cfm) and Natural	fusible linked fire of Vent ducting pass	damper, Supply vent (293 through space with fusible	7cfm) rou le linked (ited from Mach fire damper in v	ine shop. weld shop.			
PASSIVE FIRE PRO									
Deck:	С		Deckhead:	С	_				
Forward Bulkhead: Port Bulkhead:	A-0 C		Aft Bulkhead: Starboard Bulkhead:	A-6 A-0	_				
Comments / Recom	mendations			_					
Forward bulkhead does not meet the requirements of A-0 class. There are open cableways, openings around doorframe and monorail penetration does not seal. Should be re-classed C.									
FIRE/GAS DETECT	ON:								
Constant Manning Flame Detector(s) Heat Detector(s)	Space	Duct	Hydrocarbon Detection H ₂ S Detector(s) Other:	ctor(s)	Space	Duct			
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Smoke Detector(s)	<u> </u>]	ONEON		1	1
Comments / Recommendations						
FIRE FIGHTING EQUIPMENT:				_		
Dry Powder Extinguisher(s) H ₂ O Extinguisher(s)	Space	Adjacent	CO ₂ Ext	tinguisher(s)	Space	Adjacent
Fixed H ₂ O (Deluge, Sprinklers, etc.)			Extingui Fire Wa	ter Hose(s)		
Fixed Halon Other: Fusible link in exhaust vent			Fixed C	O ₂		
Comments / Recommendations						
Dry powder extinguisher is in Passageway of Engine Room outside Weld Shop.	outside Mecha	nic Shop/Port	Auxiliary Ma	chinery Room.	CO2 extinguishe	r is in #1
COMMUNICATIONS, ETC. :	_					
Telephone	CCTV		닏	PA Speak		ĭ
Fire Alarm Button	Bilge Alai General		님	Emergenc Other:	y Lighting	×
Comments / Recommendations	General	Alann		Other:		_
Comments / Recommendations						
			11			
ESCAPE ROUTES:						
Primary: stbd into Port Auxiliary Machinery Palternate: aft into #1 Engine Room, aft into Nathrate: fwd into Machine Shop, fwd into Machi	/estibule, up s	tairs to main d	eck.		deck.	
COMPARTMENT: Welding Shop						
FIRE:						
Ignition Sources / Fuel				s (Note EX ε		
Welding, grinding, torch cutting.					re seal welded	
Flammable liquid, Oxygen and Ace	tylene.	sta	ainless wh	ich are seal	nes are high p welded at join	
Consequences			isnback pr itigations	reventers are	installed.	
Possibility of damage to equipment	/compartm					
Possibility of injury to personnel	Companin		Firefighting capabilities Availability of medical treatment including			

		_		
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		-		

Risk Category: Low

medivac

Mitigations

ALARP?: Yes

Preventions (Note EX equipment)

Risk

Rank: EXPLOSION:

None

Ignition Sources / Fuel

Consequences



APPENDIX III

Risk Rank:	Risk Category:		ALARP?: Yes /	No			
FLOOD:			A	_			
Hazards		Preventions					
Firemain piping		Piping is well main	tained and monito	red for leaks			
Therman piping		T iping is well main	named and monito	red for leaks			
Consequences		Mitigations					
Damage to machinery	within weld shop and	Isolation of firemai	n system and elec	trical			
progressive damage a spaces.	as flooding moves to other	isolation.					
Risk 1 Rank:	Risk Category: Low	•	ALARP?: Yes				
OTHER: Electrical sh	ock, burns						
Hazards		Preventions					
Contact with live energy	av sources	Preventive mainter	nance and inspect	ions			
Contact with hot surfa		PPE, PTW, energy					
Consequences		Mitigations					
Possibility of injury to	personnel	Availability of medi	ical treatment inclu	uding			
Possibility of fatality							
Risk 15 Rank:	Risk Category: Medium		ALARP7: Yes				
RECOMMENDATION	is:		1				
COMPARTMENT NAME:	24.0 m Flat						
LOCATION:	Port Forward Column						
DIMENSIONS: 175	2 m3	MANNING: 1	None				
POWER / FLUID / CO							
Hull tank vents and sounding tubes. Bulk, pot water, hydraulic fluid, base oil and rig air							
CONTROL SYSTEMS							
Potable water: UV Sterilizer, De-chlorinating Unit, Pressure Set Pump, Hot Water Heater.							
HVAC / DUCTING:							
Supply Fan SF-34 Ir	nlet Valves XV 172303 Exhaust Duct Valves XV 172304		_				
PASSIVE FIRE PRO		19400-194	Vac Statutos	T. Wattyryst			
Deck:	C	Deckhead:	A-0				
Forward Bulkhead:	A-0	Aft Bulkhead:	A-0				
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Port Bulkhead:	A-0				rboard khead:		A-0		
Comments / Recom	mandations			Dui	kneau.				
Space is open to 28.5		tration of I	Rulk Ta	nks s	and Pining	Colum	n Out	er Relt su	rrounds the
lower 2 meters of the									
tanks.	opaco, mon oc	71 V 00 U0 01	ato: maii		on to turne	top for p	o tabi	o mator an	d bacc on
FIRE/GAS DETECTI	ON.							a a constitution of the second	
TIKE OAD DETECT	Space	Du	ıct	Г				Space	Duct
Constant Manning				Hvc	Irocarbon	Detector	(s)		
Flame Detector(s)			- 1		Detector		(3)	片	
Heat Detector(s)		_	╡╶│		er:			H	
Smoke Detector(s)		-	╡ │	Otti	CI		-		
Comments / Recom	mendations				'				
FIRE FIGHTING EQ									
FIRE FIGHTING EQU	JIPINEN I :	C====	A 41:	4				C	A -1:
Day Dayidaa Estinavia	- h (-)	Space	Adjac	ent	00 5.4		/- \	Space	Adjacent
Dry Powder Extinguis	sner(s)	│ 	ᅵ 片		CO₂ Exti	nguisner	(S)		
H ₂ O Extinguisher(s)					Foam				
F:	S				Extinguis				
Fixed H ₂ O (Deluge, S	Sprinklers,	⊔			Fire Wat	er Hose(S)		
etc.)						_			
Fixed Halon				1	Fixed Co) 2			
Other:			_ ⊔						
Comments / Recom									
COMMUNICATIONS	, ETC. :								
Telephone		CCTV			닏	PA Spe			\boxtimes
Fire Alarm Button	\boxtimes	Bilge Alar			\boxtimes	Emerge	ency l	_ighting	
GA Alarm Button		General A	Alam		\boxtimes	Other:_			
Comments / Recom									
No telephone at this l	evei. Levei on	en usea to	or contin	iea s	pace entry	у ріаттогт	i ior t	anks.	
ESCAPE ROUTES:		<u> </u>							
Through water tight d	loor to stairwell	to decks a	above o	r dec	ks below.	Possibl	e to p	ass from t	forward
column to after colum	nn by passage t	through po	ntoon.						
COMPARTMENT:	24.0 m Flat								
FIRE:									
Ignition Sources / F	uel			Pr	eventions	(Note F	Y Anı	inment)	
Electric wiring/shorts				_	eventive m	·- · · · ·	· · · · ·	·	ione
Licouro Willingronorto				''	CVCIICIVCII	anichai	ice ai	iu ilispeci	10113
Consequences	 		_		tigations		_		
Possibility of damage	to equipment				efighting o				
Possibility of injury to	personnel				ailability o edivac	f medica	l treat	ment inclu	uding
Risk 9	Diak Cata						ADD:		
Risk 9 Rank:	Risk Catego	ry: Low				AL.	ARP?	: Yes	
EXPLOSION:								-	
Ignition Sources / F	uel			De	avantion-	(Noto F	V ~~:	inman4)	
-gandon ooulces / F		_		1 -10	eventions	INOLE	^ equ	npment)	
	_								
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Consequences		Mitigations			
		intigations			
-					
Risk	Risk Category:		ALARP?: Yes / No		
Rank:					
FLOOD:		<u> </u>			
Hazards		Preventions			
Potable water line rup	ture	Preventive mainte	nance and inspections		
			·		
Consequences		Mitigations			
	xtreme flooding would cause	Ballast and bilge			
	st and ventilation in port	Training in damag	e scenarios		
forward quadrant. effe	ect on stability				
Diele 0	Diel		AL ADDO: Va-		
Risk 9	Risk Low		ALARP?: Yes		
Rank:	Category:				
OTHER: Chemicals, Hazards	burns	Preventions			
Exposure to hot surfa	200	PPE			
Exposure to not surface		FFE			
Exposure to chemical	3				
Consequences		Mitigations			
Possibility of injury to	nersonnel	Availability of MSI	ns		
1 0331Dility of Hijury to	personner	Availability of medical treatment			
		/ (Valiability of files	iodi trodinoni		
Risk 9	Risk Category: Low		ALARP?: Yes		
Rank:	Kisk Category. Low		ALAN I. 163		
RECOMMENDATION	<u> </u>				
REGOMMENDATION					
COMPARTMENT	28.5 m Flat				
NAME:	20.5 111 141				
LOCATION:	Port Forward Column				
DIMENSIONS: 175	2 m3	MANNING:	None		
POWER / FLUID / CO	<u> </u>				
	nes, barite, rig air, vent lines, pot water	<u>-</u>			
·	•				

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CONTROL SYSTEMS:	CONTROL SYSTEMS:							
Hydraulic Power Units for Ballast a								
Solenoid valve cabinet for the balla							44	. Dilan Control
No. 8 Expansion Tank and Gravity								
Station 21, 1 locess Station 22, ND	Station 21, Process Station 22, NDU A-2 181036, Vent lines and sounding tubes for port forward quadrant tanks and voids.							
HVAC / DUCTING:	******							
Supply Fan SF-34 Inlet Valves XV	172301 /	XV172373						
Exhaust Fan EF-34 Exhaust Duct V	/alves XV	172302 / XV	172374					
PASSIVE FIRE PROTECTION	ON:							
Deck: C				Dec	khead:	A-0		
Forward Bulkhead: Out	er Hull			Aft I	Bulkhead:	Oute	er Hull	
Port Bulkhead: Out	er Hull			Sta	rboard	Oute	er Hull	
				Bull	khead:			
Comments / Recommenda	tions							
Space is open to 24.0 m flat	at pene	tration of E	Bulk Tai	nks a	ınd Piping			
FIRE/GAS DETECTION:								
	Space	Du	ct		-		Space	Duct
Constant Manning			_			Detector(s)		📙
Flame Detector(s)]	H_2S	Detector	(s)		
Heat Detector(s)]	Oth	er:			
Smoke Detector(s)	\boxtimes						•	
Comments / Recommenda	tions							
FIRE FIGHTING EQUIPME	NIT.							
TINE FIGURE	<u> </u>	Space	Adjac	ent	<u>-</u>		Space	Adjacent
Dry Powder Extinguisher(s)					CO ₂ Exti	nauisher(s)	K	
H₂O Extinguisher(s)		ΙH	l H		CO ₂ Extinguisher(s)			
1120 Extinguisher(3)					Extinguis	char(c)		
Fixed H ₂ O (Deluge, Sprinkle	re					er Hose(s)		
etc.)	13,				I IIC VVal	er 1103e(3)		
Fixed Halon					Fixed CO	٦.	_	
Other:		ΙH			i ixed CC	2		
Comments / Recommenda	tions				<u> </u>		I	
COMMUNICATIONS, ETC.	:							
Telephone		CCTV			П	PA Speaker	_	\boxtimes
Fire Alarm Button	$\overline{\boxtimes}$	Bilge Alar	m		Ħ	Emergency		\ \overline{\to I} \ \
GA Alarm Button	\sqcap	General A			$\overline{\boxtimes}$	Other: Soun		⊠ l
Phone								
Comments / Recommenda	tions							
ESCAPE ROUTES:								
ESCAPE ROUTES: Through water tight door to solumn to after column by particular to the solumn n by particular to the solution by particular to				r dec	ks below.	Possible to p	ass from for	ward

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COMPARTMENT: 2	28.5 m Flat				
FIRE:					,
Ignition Sources / Fu	iel	Preventions (Note	e EX equipn	nent)	
Electric wiring /shorts		Preventive mainte	nance and i	nspect	ions
Electric motors		Housekeeping			
Solenoid cabinet					
Hydraulic fluid					
Consequences		Mitigations			
Possibility of damage	to equipment Loss of remote	Firefighting capabi			
	ventilation valves in the port	Availability of med	ical treatme	nt inclu	iding
forward quadrant.		medivac			
Possibility of injury to	personnel				
Risk 9	Risk Category: Low		ALARP?:	Yes	
Rank:					
EXPLOSION:					
Ignition Sources / Fu	ıel	Preventions (Note	e EX equipn	nent)	
N/A					
Consequences		Mitigations	_		
Risk	Risk Category:		ALARP7:	Yes /	No
Rank:					
FLOOD:					
Hazards		Preventions			
Potable water line rup	ture. Flooding from collision.	24.0 m level has b	ilge alarms.		
Concoguences		Mitigations			
Consequences	xtreme flooding would cause	Willigations			
	st and ventilation in port				
forward quadrant.	st and ventilation in port				
TOIWAID QUADIAIIL					
Diale 0	Diek Cote comit		ALARP?:	V	
Risk 9 Rank:	Risk Category: Low	*	ALAKP /:	Yes	
				_	
OTHER:		Preventions			
Hazards		Fleveiluoiis			
		Midianations			
Consequences		Mitigations			
			==		
Risk	Risk Category:		ALARP?:	Yes /	No
Rank:	<u> </u>				
RECOMMENDATION	IS:				
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CONFIDENTIAL TRN-MDL-01184769

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT

DEEPWATER HORIZON

APPENDIX IV

INSTALLATION PERSPECTIVE RISK ANALYSIS TABLES

	RECOMMENDATIONS / COMMENTS
APPENDIX IV	RISK RANKING S L RR
A	MITIGATIONS
MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON	QUENCES PREVENTIONS
	CONSEQUENCES
Transocear	HAZARDS

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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		RISK	RECOMMENDATIONS
				2	RANKING	/ COMMENTS
				S L	R	
collision of vessel into ng (on location or during rig move)	Major structural damage. Possible loss of station Possible well control situation. Possible environmental impact Possible loss of stability. Possible personnel injury or death Suspension of operations	Watchkeeping CPA alarm on Radar. Ability to communicate with other vessels including use of pyrotechnics and emergency signaling devices Possible use of OSV to contact approaching vessel Ability to shut in well disconnect and move off location Rig lighting (obstruction lights and normal lights and normal lights and normal lights and normal lights and and move notifications and navigation alerts Inspection and maintenance of OSV mooring systems OSV watchkeeping procedures OSV maintenance and inspection	Compartmentalization / watertight integrity Training in damage and emergency response scenarios. Ballast and bilge systems. Availability of medical treatment including medivac Ability to evacuate to rig. Spill response procedures	υ	8	This hazard has a high ranking but it is considered that all reasonable preventions and mitigations are in place.
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Transocean DEEPWATER HORIZON

APPENDIX IV

RECOMMENDATIONS / COMMENTS RR RANKING 9 RISK _ ⋖ ဟ S Training in emergency Availability of medical MITIGATIONS Redundant controls during landings Restricted access Announcement of classification) and take-offs **Emergency spill** scenarios treatment response / damage ETA (DP3 landing Helideck ops under direction of HLO **PREVENTIONS** for debris before incoming aircraft Helideck lighting Communication of check helideck Obstruction lights conditions to Procedures to weather CONSEQUENCES Possible fatalities Possible environmental Possible loss of station Structural damage to Possibility of fire and Possible injury to personnel explosion keeping Helicopter collision HAZARDS at helideck

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MAJOR ACCIDENT HAZARD

	RECOMMENDATIONS / COMMENTS							_			_								_			
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APPENDIX IV	RAN	S	5 B	_	_	_	_	_		_			_	_	_		_			_		
AP	MITIGATIONS		Emergency response	procedure, training	and drills.	Ability to move off	station.	Firefighting	capabilities	Ability to evacuate the	rig.	Availability of medical	treatment including	medivac	Redundant BOP	controls.	Passive fire protection	in highly populated	areas of vessel.	EX rated equipment	to prevent ignition	of blowout.
RISK ASSESSMENT DEEPWATER HORIZON	PREVENTIONS		Well control	procedures and	training of drill	crew in well	control	Maintenance and	testing of BOP's	and other	subsea and well	control	equipment	Instrumentation and	indication of well	status.	Hydrocarbon /	Combustible	Gas detection	system.	Redundant BOP	controls
	CONSEQUENCES		Major environmental	impact	Multiple personnel	injuries and/or	fatalities.	Major structural	damage and	possible loss of	vessel.											
Transocean	HAZARDS		wout	(at Drill Floor)																		

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

RECOMMENDATIONS / COMMENTS			
RISK	RR	9	74
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MITIGATIONS	S	\$ p = 0 = -	Utilization of diverter system Ability to evacuate the rig Errefighting capabilities Availability of medical treatment including medivac Emergency spill response
PREVENTIONS		Seismic evaluation. Drilling pilot holes. History of wells in same field. Monitoring with ROV. Bubble watch.	Good drilling practices Instrumentation and indication of well status Subsea isolation equipment Training in well control including required drills
CONSEQUENCES		Major environmental impact Multiple personnel injuries and/or fatalities. Possible loss of stability Possible structural damage	Possible ignition at surface with fire and or explosion Possible major structural damage Possible loss of riser Possible environmental impact Possible injury to personnel Possible fatalities
HAZARDS		Shallow gas blowout (subsea)	Gas in riser

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APPENDIX IV MAJOR ACCIDENT HAZARD RISK ASSESSMENT

	SK RECOMMENDATIONS (ING / COMMENTS	RR	17					_				_											_						
	RISK	١	B		_					_				_			_	_			_			_		_		_	
		ဟ	5		_					_	_	_						_	_	_	_				_				
	MITIGATIONS		Training in emergency	/ damage	scenarios.	Ability to change rig	heading and	blowers to prevent	gas buildup.	Ability to shut in well,	disconnect and	move off location	Firefighting	capabilities	Availability of medical	treatment including	medivac	Ability to evacuate the	ij	Use of degassers	Support of H2S safety	specialist in known	or suspected H2S	zones (training	and equipment	such as extra	SCBA's and	cascade systems	for work on rig
DEEPWATER HORIZON	PREVENTIONS		History of wells in	same field.	Monitoring of well	Policies and	brocedures	(prevent bringing	H2S to surface).	H2S detectors	placed	strategically on	rig for early	detection	Ability to secure the	well													
	CONSEQUENCES		Environmental impact	Possible ignition of gas	cloud.	Multiple personnel	injunes and/or	fatalities.	Structural / equipment	damage due to H2S	embrittlement.																		
Iransocean	HAZARDS		Toxic gas release																										

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

RISK RECOMMENDATIONS RANKING / COMMENTS	S L RR	n 5 A 16																	
MITIGATIONS		Compartmentalization	and watertight	integrity	Training in emergency	/ damage	scenarios	Availability of medical	treatment including	medivac	Spill response	procedures	Ballast and bilge	,	capabilities	capabilities Ability to shut in well,	capabilities Ability to shut in well, disconnect and	capabilities Ability to shut in well, disconnect and move off location	capabilities Ability to shut in well, disconnect and move off location
PREVENTIONS		Preventive	maintenance	and inspections	including class	and regulatory	Proper ballasting	and deck loading	brocedures	Stability and load	calculations	Corrosion control							
CONSEQUENCES		Multiple personnel	injunes and/or	fatalities.	Possible fire and	explosion.	Possible well control	situation.	Possible environmental	impact									
HAZARDS		Major structural	<u>(e</u>																

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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		2	RISK	RECOMMENDATIONS
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Severe weather including eddy currents	Possible personnel injury or fatality. Possible man overboard. Suspension of operations Possible structural damage. Possible damage to subsea riser and equipment. Possible inability for medivac or evacuation Possible environmental impact Possible loss of station keeping	Forecasting Avoidance of severe weather when moving the rig Utilization of survival draft Ability to shut in the well, disconnect and hang off Eddy current watch and report Restriction of access to decks during severe weather Utilization of 5 phase hurricane procedures	Compartmentalization and watertight integrity Training in emergency / damage scenarios including emergency ballast drills Availability of medical treatment including medivac. Utilization of 5 phase hurricane procedures Spill response procedures Ability to evacuate Emergency notifications (USCG, etc.) Emergency	ισ	O	ន	This hazard has a high ranking but it is considered that all reasonable preventions and mitigations are in place.
Loss of station keeping ability (due to power loss, loss of GPS, etc.)	Possible well control situation Possible environmental impact Damage to equipment Possibility of injury to personnel	Redundancy in equipment (DP3 classification) Zone alarms Training of marine personnel Inspections and preventive maintenance	Training in emergency / damage scenarios Ability to shut in well and disconnect Emergency notifications Spill response procedures Availability of medical treatment including medivac	2	ω	17	

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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	CONSEQUENCES	PREVENTIONS	MITIGATIONS	S	RISK RANKING L RR	RECOMMENDATIONS / COMMENTS
PO PO PO PO PO PO PO PO PO PO PO PO PO P	Possible personnel injury. Possible environmental impact.	Only on board when required. OIM notified when radioactive sources are brought on board Stored in isolated area with proper containment and appropriate markings. Only handled by qualified personnel.	Availability of medical treatment	-	<	
80 9	Possible personnel injury. Possible environmental impact. Possible equipment damage.	or O Sto O O	Availability of medical treatment including medivac	κ	9	

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<u> </u>	MAJOR ACCIDENT HAZARD RISK ASSESSMENT	APPENDIX IV
ransocean	DEEPWATER HORIZON	

HAZARDS CON HAZARDS CON Dropped or fallen inju objects. Possib	SEQUENC	DEEPWATER HORIZON SES PREVENTIONS			
_	SEQUENCES	PREVENTIONS			
<u> </u>			MITIGATIONS	RANKING	RECOMMENDATIONS / COMMENTS
G G				S L RR	
Possit and Possit and	Possible personnel injury or death. Possible damage to vessel structure and/or equipment. Possible damage to subsea structure and/or equipment. Possible damage to supply boats. Possible environmental impact Possible well control situation	Preventive maintenance, inspections and certification of lifting devices (cranes, tuggers, chain hoists, etc.) and lifting gear including regulatory, class and third party inspections Only approved spares used in repair of lifting devices Restriction of crane use to certified designated personnel Inspection and certification of padeyes Inspection of lifting eyes on equipment such as pumps Procedure to suspend loads over water as long as possible when offloading/ backloading	Training in emergency / damage scenarios Availability of medical treatment including medivac Ballast and deballast systems to stabilized rig. Well control procedures procedures procedures procedures for heavy lifts ifwhen necessary Communications and barricades to restrict access to area where lifts Are being made or overhead work is planned	D 20	This hazard has a high ranking but it is considered that all reasonable preventions and mitigations are in place.
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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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K RECOMMENDATIONS ING / COMMENTS	RR	20		
RISK RANKING		O	PO	<u> </u>
MITIGATIONS	S	Training in emergency / damage scenarios Availability of medical treatment including medivac Ballast and bilge systems to stabilize ng. Well control procedures Spill response procedures for heavy lifts if/when necessary Communications and barricades to restrict access to area where lifts Are being made or overhead work is planned	PAGE	
PREVENTIONS		Inspection of equipment /cargo being offloaded and/or backloaded Space audits. Derrick inspections. Dropped object campaign. Use of secondary securing on equipment where required safe work practices including use of lanyards and securing for tools equipment and parts when working at heights Proper function of load indication on lifting devices and proper manifesting of cargo Proper function of securing devices such as fingerboard fingerboard fingerboard fingers, clamps, dogs, etc.		
CONSEQUENCES		Possible personnel injury or death. Possible damage to vessel structure and/or equipment. Possible damage to subsea structure and/or equipment. Possible damage to supply boats. Possible environmental impact Possible well control situation	01	>
HAZARDS		Dropped or fallen objects. (continued)	REVISION NO:	

APPENDIX IV MAJOR ACCIDENT HAZARD RISK ASSESSMENT

	RECOMMENDATIONS / COMMENTS																
	RISK	8	16														
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		တ	5														
	MITIGATIONS		Emergency response	procedures,	training and drills.	Automatic shutdown	systems (ESD).	Flame detection.	Fire suppression	system (monitors,	deluge, etc.)	Hospital on board.	Medivac capability.	Deluge system on	nearby helifuel	station.	
DEEPWATER HORIZON	PREVENTIONS		Constant monitoring	during operation.	Risk analyses done	throughout	design,	construction, and	installation	phases.	Policies and	procedures.	Other work on	stand-by during	well test work.		
	CONSEQUENCES		Possible personnel	injury or death.	Possible damage to	vessel structure	and/or equipment.	Possible environmental	impact.	Suspension of	operations.	Possible loss of station	keeping ability.	Possible damage to	well.		
Iransocean	HAZARDS		Major fire and/or	explosion (well	test facility).												

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DEEPWATER HORIZON

APPENDIX V

SYSTEM PERSPECTIVE RISK ANALYSIS TABLES

Transocean

HAZARDS

MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX V

RISK **MITIGATIONS PREVENTIONS** CONSEQUENCES

RECOMMENDATIONS / COMMENTS

/ COMMENTS		- NATIO					
RANKING	RR		2	2	-	8	0
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	တ		-	-	-		-
			Redundancy in operator stations Multiple fire and gas matrices	Redundancy in operator stations Multiple fire and gas matrices	Redundant fire and gas matrices Location can be called in to CCR	Redundant fire and gas detection/alarm systems Constant monitoring CCR manned by 2 personnel /24 hrs	Redundant fire and gas detection/alarm systems Constant monitoring CCR manned by 2 personnel /24 hrs
		N AND ALARMS	Preventive maintenance and testing.	Preventive maintenance and testing. Dual 24V DC backup power supplies. Control Room constantly manned.	Preventive maintenance and testing.	Preventive maintenance and testing	Preventive maintenance and testing
		FIRE AND GAS DETECTION AND ALARMS	Loss of some redundancy but no immediate consequence	Loss of some redundancy but no loss of detection and alarm capabilities	Loss of ability to pinpoint location of alarm	No immediate consequence other than loss of redundancy	Loss of main fire and gas system
		SYSTEM: FIF	Loss of one operator station	Loss of multiple operator stations	Loss of all operator stations	Loss of one PCU	Loss of both PCU's

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

RECOMMENDATIONS / COMMENTS					
RISK RANKING	RR	8	ro.	တ	ß
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	တ	-	0	м	7
MITIGATIONS		Redundant fire and gas detection systems	Light beacons Redundant alarms and communication of situation	Redundant UPS systems	Redundant system, SSS is stand alone
PREVENTIONS		Preventive maintenance, inspections and testing	Preventive maintenance, inspections and testing	Preventive maintenance, inspections and testing	Preventive maintenance, inspections and testing
CONSEQUENCES		Loss of SVC	Loss of audible alarms	Loss of some redundancy	Loss of SVC
HAZARDS		Loss of termination boards	Loss of Akusta alarm station/system	Loss of UPS	Loss of fire central

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RECOMMENDATIONS / COMMENTS																		
RISK RANKING	RR	-									10				10			
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	ဟ	-									-				-			
MITIGATIONS		Fault indication at Fire	(open and short	circuit).	Troubleshoot and	repair / replace as	necessary.	Use of fire watch.	Portable gas	detection.	Fault alarms at the	operator stations	Repair or replace.		Fault alarms at the	operator stations	Nepall of Teplace.	
PREVENTIONS		Proper installation	and protection of								Preventive	maintenance and	inspections	90 day testing	Preventive	maintenance and	90 day testing	•
CONSEQUENCES		Loss of fire detection	detectors) or string	Loss of gas detection	loop (single	detector) or string					Loss of detection	capability for single	space		Loss of detection	capability for	allected spaces	
HAZARDS				SSE	information.						Malfunction/loss	single sensor,			Loss of multiple	sensors		

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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TELEPHONE, PA, GENERAL ALARM SYSTEM main Loss of telephone maintenance and inspections ing) selephone Loss of single phone or preventive maintenance and multiple phones. maintenance and inspections consequence maintenance and inspections sof both Loss of PA alarms and maintenance and inspections s. No immediate consequence maintenance and inspections sof both Loss of PA ability and inspections single single so all alarms to single single loop or single consequence maintenance and single inspections speaker.	HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		æ	RISK	RECOMMENDATIONS	
TELEPHONE, PA, GENERAL ALARM SYSTEM main Loss of telephone maintenance and system. Loss of single phone or preventive maintenance and phones, wif, etc. multiple phones. sof both consequence maintenance and phones, wif, etc. multiple phones. sof both consequence maintenance and phones, wif, etc. multiple phones. sof both consequence maintenance and phones, wif, etc. multiple phones. sof both consequence maintenance and phones, wif, etc. sof both consequence maintenance and phones, wif, etc. maintenance and phones, wif, etc. sondpowered phones, wif, etc. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. communication i.e. soundpowered phones, wif, etc. soun		,				RAN	KING	/ COMMENTS	
TELEPHONE PA, GENERAL ALARM SYSTEM Talin Loss of telephone board system. Loss of telephone communication system. Loss of single phone or preventive maintenance and means of communication inspections inspecti					ဟ	_	RR		
Due board system. Loss of telephone maintenance and means of communication inspections soundpowered phones, whi, etc. Loss of single phone or Preventive maintenance and phones, whi, etc. Redundancy in means of maintenance and phones, whi, etc. Roundpowered phones, inspections inspections inspections of communication inspections inspections in various area and phones, which etc. So of both coss of PA alarms and preventive maintenance and of communication inspections inspections of communication inspe		ELEPHONE PA. GENERA	AL ALARM SYSTEM						
Due board system. maintenance and means of communication inspections communication inspections i.e. soundpowered phones, vMf, etc. soundpowered phones, vMf, etc. soundpowered communication inspections consequence maintenance and phones, vMf, etc. soundpowered phones, vMf, etc. s	main	Loss of telephone	Preventive	Redundancy in	7	മ	ဖ		
relephone Loss of single phone or Preventive possible loss of multiple phones. Redundancy in means of maintenance and means of communication in various area consequence maintenance and phones, vhf, etc. phones, vhf, etc. consequence maintenance and phones, vhf, etc. phones, vhf, etc. phones, vhf, etc. consequence maintenance and phones, vhf, etc. phon	Telephone board	system.	maintenance and	means of					
tilure. No immediate consequence maintenance and phones, vhf, etc. inspections inspections communication inspections consequence maintenance and communication inspections sof both Loss of PA alarms and maintenance and inspections board. Solution Consequence maintenance and inspections of communication in various area Availability of spares Availability and inspections board. Solution Consequence maintenance and spare parts on board. Solution Communication inspections of communication in various area and an inspections of communication inspections of communic	-	•	inspections	communication					
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ge, multiple phones. inspections communication ing) multiple phones. inspections communication inspections illure. No immediate consequence maintenance and inspections beacons of communication inspections or communicat	Failure of telephone	Loss of single phone or	Preventive	Redundancy in	-	B	2		
illure. No immediate consequence maintenance and inspections sof both Loss of PA alarms and bacons consingle loss of all alarms to single loop or single consequence. Illure. No immediate preventive consequence maintenance and inspections phones, whf, etc. soundpowered phones, whf, etc. consequence maintenance and inspections phones, whf, etc. consequence maintenance and inspections communication inspections communication consequence maintenance and communication communicat	cabling	possible loss of	maintenance and	means of					
illure. No immediate Preventive Sof both Loss of PA alarms and Pass of both Loss of PA ability and Illure or single loop or single speaker.	(breakage,	multiple phones.	inspections	communication					
so for both Loss of PA ability and loss of all alarms to single loop or single lo	grounding)			i.e.					
ss of both Loss of PA ability and loss of all alarms to single loop or single loo				soundpowered					
ss of both Loss of PA ability and single loop or si				phones, vhf, etc.					
ss of both Loss of PA alarms and inspections Availability of spares PA beacons maintenance and of communication inspections Spare parts on board. I consequence maintenance and of communication inspections board. I consequence maintenance and of communication inspections board. I consequence maintenance and spare parts on single loop or single inspections board.	Handset failure.	No immediate	Preventive	Redundant systems	-	ш	10		
ss of both Loss of PA alarms and Preventive Redundant means 1 B maintenance and of communication inspections Spare parts on board. I coss of PA ability and Preventive Spare parts on single loop or single response inspections speaker.		conseduence	maintenance and	of communication					
ss of both Loss of PA alarms and Preventive Redundant means 1 B maintenance and of communication inspections Spare parts on board. Nating or Loss of PA ability and Preventive single loop or single loo			inspections	in various area					
ss of both Loss of PA alarms and Preventive Redundant means 1 B maintenance and of communication inspections Spare parts on board. I wiring or Loss of PA ability and single loop or single single loop or single redundant means 1 B of communication inspections board.				Availability of spares					
So f both Loss of PA alarms and Preventive Redundant means 1 B maintenance and of communication inspections Spare parts on board. I writing or Loss of PA ability and single loop or single single loop or single inspections board.									
S. maintenance and of communication inspections Spare parts on board. Nairing or Loss of PA ability and Preventive Telephone paging. 1 D single loop or single inspections board. Spare parts on maintenance and Spare parts on inspections board.	Loss of Loss of both	Loss of PA alarms and	Preventive	Redundant means	-	മ	2		
s. Spare parts on inspections Spare parts on board. Nairing or Loss of PA ability and Preventive Telephone paging. 1 D single loop or single inspections board. Spare parts on inspections board.	Akusta PA	peacons	maintenance and	ot communication					
single loss of PA ability and Preventive Telephone paging. 1 D single loop or sin	systems.		inspections	Spare parts on					
single loss of PA ability and Preventive Telephone paging. 1 D single los of all alarms to maintenance and Spare parts on single loop or single inspections board.				board.					
single loss of all alarms to maintenance and single loop or single inspections speaker.	Loss of PA wiring or	Loss of PA ability and	Preventive	Telephone paging.	-	۵	4		
single loop or single inspections speaker.	loss of single	loss of all alarms to	maintenance and	Spare parts on					
speal	speaker.	single loop or single	inspections	board.					
		speaker.							
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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS	_ ≥	RISK RANKING	RECOMMENDATIONS / COMMENTS
				<u>ი</u>	RR	
Talkback system failure	Loss of direct communication with derrick, moonpool monkeyboard, racker, BOP control etc.	Preventive maintenance and inspections	Redundant means of communications in various spaces	—	10	
SYSTEM: M.	MARISAT, Satellite phone system, GlobalSat, VHF, SSB, GMDSS, Digital Link, Cap Rock	ystem, GlobalSat, VHF,	SSB, GMDSS, Digital Li	 	- Rock	,
Loss of single	Loss of some	Preventive	Redundancy in	-	П 10	Radio comms equipment
means	redundancy	maintenance and	communications			installed in accordance
nunication	depending on	inspections	systems			with all governing
	equipment/system	including radio	Repair / replace.			bodies, regulatory
	lost	survey for class				agencies and
						recommended practices
						Vhf transceivers with
						separate power supplies
						installed on bridge, ECR,
						OIM office, driller's work
						station, cranes and
						lifeboats plus hand held

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

RISK RECOMMENDATIONS RANKING / COMMENTS	RR		9							Θ				-				
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MITIGATIONS			Use of handpump for	valve operations						Ability to isolate,	replace and	repair.	Compartmentalization	Damage stability	training.	Bilge and bilge	alarms.	CCTV
EQUENCES PREVENTIONS		(EQUIPMENT)	Preventive	maintenance and	inspections					Preventive	maintenance.	Ultrasound and NDT	of piping.	Corrosion control	(anodes, etc.).			
CONSEQUENCES		BALLAST/BILGE SYSTEM (EQUIPMENT)	Temporary loss of	main ballast	capability.	Sea chest valves close	and all transfer	ceases.	Failsafe	Possible flooding.	Possible loss of	stability.	Possible reduction of	ballasting ability.				
HAZARDS		SYSTEM: B		hydraulics for	any quadrant					Broken or leaking	pipe in ballast	system.						

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APPENDIX V MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON Transocean

ventive Spare parts on board. maintenance and Ability to isolate and replace all valves except skin valves. Daily checks of spaces. Bilge and bilge alarms CCTV.
ventive Spare parts on board. maintenance and Ability to isolate and replace all valves except skin valves. Daily checks of spaces. Bilge and bilge alarms CCTV.
Nedundant pumps. maintenance and Spares on board. inspections.

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	CONSEQUENCES	PREVENTIONS	MITIGATIONS	0	RISK	RISK	RECOMMENDATIONS
				တ	; (R R	
Loss	Loss of redundancy	Preventive maintenance and inspections.	Redundant pumps. Spares on board.	-	ω	2	
No im cor Loss o	No immediate consequence Loss of redundancy	Preventive maintenance and inspections	Redundant pumps Ability to effect repairs	-	m	2	
LAST	/BILGE CONTRO	BALLAST/BILGE CONTROL SYSTEM INCLUDING TANK LEVEL INDICATION	TANK LEVEL INDICAT	8			
Possit to t Sy:	Possible loss of ability to function Ballast System.	Preventive maintenance and inspections	Ability to manually actuate valves Training in emergency ballast scenarios	~	O	က	
No imr con Loss o	No immediate consequence Loss of some redundancy	Preventive maintenance and inspections	Redundant stations in CCR, ECR And columns for each quadrant	~	m	N	
Loss o	Loss of some redundancy	Preventive maintenance and inspections	Redundant stations in ECR and columns Training in emergency scenarios	2	ω	ထ	Control can be switched to ECR /emergency stations or taken by ECR/ emergency stations upon total loss of CCR control

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		RECOMMENDATIONS / COMMENTS			
		RISK	RR	4	ო
APPENDIX V		A R	_	٥	O
PEN			တ		-
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		MITIGATIONS		Possibility of switching tanks used for ballasting Ability to sound tanks manually. Monitoring of amperage while pumping	Ability to manually actuate valve.
MAJOR ACCIDENT HAZARD	MISK ASSESSMENT DEEPWATER HORIZON	PREVENTIONS		Preventive maintenance and inspections	Preventive maintenance and inspections
		CONSEQUENCES		Lack of remote readout of tank levels	Inability to remotely actuate valve.
0	Transocean	HAZARDS		Level indication failure. Single tank	Actuator failure (including wiring).

NS RISK RECOMMENDATIO RANKING / COMMENTS	S L RR		
MITIGATIONS			
CONSEQUENCES PREVENTIONS		POWER GENERATION	
HAZARDS		SYSTEM: P	

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Transocean DEEP DEEP

MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

HAZARD MENT RIZON

RECOMMENDATIONS / COMMENTS				
RANKING	RR	m	n	17
RAN R		O	O	ш
	တ	-	-	ω
MITIGATIONS		Redundant engines.	Redundant generators	Multiple redundant engines. Phase back drilling. UPS Redundant power sources for various equipment Spill response procedures Ability to shut in the well
PREVENTIONS		Preventive maintenance and inspections Continuous monitoring.	Preventive maintenance and inspections Continuous monitoring.	Preventive maintenance and inspections Continuous monitoring.
CONSEQUENCES		Can be of no immediate consequence depending on power requirements Loss of some redundancy.	No immediate consequence depending on power requirements Loss of some redundancy.	Possible loss of all main power Possible loss of station keeping depending on weather/currents Shut down drilling Possible well control incident Possible environmental impact
HAZARDS		Loss of single engine.	Loss of single generator.	Loss multiple engines/ generators

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		RISK	RISK RANKING	RECOMMENDATIONS / COMMENTS
				တ	_	RR	
Loss of all engines or generators.	Loss of all main power Possible loss of station keeping depending on weather/currents Shut down drilling Possible well control incident Possible environmental impact	Preventive maintenance and inspections Continuous monitoring.	Blackout start Redundant power sources for various systems and equipment Spill response procedures ability to shut in the well	6	O	5	Upon loss of all main engines the standby generator provides power for the auxilianies needed to bring the engines back on line
SYSTEM: P(POWER MANAGEMENT/DISTRIBUTION	STRIBUTION					
Loss of single	No immediate	Preventive	Redundant engines		ပ	ო	
generator	consequence.	maintenance and	/generators.				
breaker.	Loss of some redundancy	inspections					
	. (monitoring.					
Loss of multiple	Possible loss of all	Preventive	Redundant	2	m	17	Depending on power
Generator	power.	maintenance and	generators.				requirements, a loss can
Breakers.		inspections	Phase back drilling				lead to a cascade effect
		Continuous monitoring.	UPS available.				whereby all power is lost
Loss of single 11kv	Momentary power loss	Preventive	Repair/replace	7	m	9	
breaker to	to half of rig	maintenance and	breaker	_			
transformer		inspections	Ability to bypass -				
		Monitoring	redirect power as				
			required				

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DEEPWATER HO

MAJOR ACCIDENT HAZARD
RISK ASSESSMENT
DEEPWATER HORIZON

RISK RECOMMENDATIONS RANKING / COMMENTS	S L RR	Φ
	ဟ	ო
MITIGATIONS		Phase back of drilling Ability to effect repairs Ability to shut in the well Spill response procedures Training in emergency scenarios - constant manning in CCR Monitoring of power systems
PREVENTIONS		Preventive maintenance and inspections Continuous monitoring of transformers
CONSEQUENCES		Possible shutdown of drilling Possible loss of station keeping Possible environmental impact
HAZARDS		Loss of multiple transformers

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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RECOMMENDATIONS	/ COMMENTS		A cascade effect can take place depending on power requirements					
×	RANKING S L RR		17	91	10		ო	7
RISK	Z Z		Φ	∢	ш		O	υ
	<u>ه</u>		က	က			-	- 2
MITIGATIONS		DIATORS	Redundant exchangers Ability to effect repairs	Ability to effect repairs	Ability to isolate affected engine. Ability to effect repairs.		Redundant pumps Spares on board. Ability to effect repairs	Redundant pumps Spares on board ability to effect repairs
PREVENTIONS		T EXCHANGERS/RA	Preventive maintenance and inspections	Preventive maintenance and inspections	Preventive maintenance and inspections including utrasound and NDT for pipes		Preventive maintenance and inspections	Preventive maintenance and inspections
HAZARDS CONSEQUENCES PREVENTIONS MITIGATIONS		ENGINE COOLING - HEAT EXCHANGERS/RADIATORS	No immediate consequence	Reduced engine- cooling capability. Possible loss of engine cooling capability.	Loss of engine cooling and loss of power from affected engine	SALT WATER SERVICE	No immediate consequence.	Partial or total loss of salt water service
HAZARDS		SYSTEM: E	Failure of heat exchange	Failure of all heat exchange rs	Pipe /valve failure. one engine	SYSTEM: S.		Failure of multiple

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

RECOMMENDATIONS	/ COMMENTS									
ž	RANKING	RR	16	m	2		9			
RISK	Ž	_	4	၁	Δ		മ			
	₽	S	က	-	1		7	_		
MITIGATIONS			Ability to use the standby generator Availability of spares and ability to effect repairs	Ability to isolate and feed from other SW Service pump.	Ability to isolate valve and effect repairs Ability to reroute service		Redundancy in systems –	ability to	utilize other	cooling system
PREVENTIONS			Preventive maintenance and inspections	Preventive maintenance and inspections including ultrasound and NDT	Preventive maintenance and inspections	OLING	Preventive maintenance	and inspections	Continuous	monitoring
HAZARDS CONSEQUENCES PREVENTIONS MITIGATIONS			ater	Flooding. Possible stability issue. Partial or total loss of salt water service depending on location of break	Partial loss of salt water depending on location of valve	FRESHWATER COOLING	Loss of some redundancy	Possible temporary	loss of systems on	affected side
HAZARDS			Failure of all pumps	Pipe failure (main line).	Valve failure.	SYSTEM:	Loss of either	Port	cooling or	stbd cooling

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APPENDIX V MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON Transocean

RECOMMENDATIONS / COMMENTS			As with all other issues	involving power	generation, a cascade	effect can ensue based	on power requirements		
RISK RANKING	RR R	m	တ						
RISK ANKIN	S L	0	m	_				,	
~	ဟ	-	5						
MITIGATIONS		Availability of spares and ability to effect repairs Constant monitoring of station keeping	Ability to effect	repairs	Ability to cross	over to salt	water service	and flush	afterwards
PREVENTIONS		Preventive maintenance, inspections and testing Continuous monitoring of systems	Preventive	maintenance,	inspections and	testing	Constant	monitoring of	systems
HAZARDS CONSEQUENCES PREVENTIONS MITIGATIONS		Loss of affected thruster Station keeping ability can be degraded depending on weather/thruster requirements	Can be of no	immediate	consequence	depending on	power	requirements	
HAZARDS		Thruster	Diesel	cooling					

HAZARDS	CONSEQUENCES PREVENTIONS	PREVENTIONS	MITIGATIONS	~	RISK	RISK RANKING	RECOMMENDATIONS / COMMENTS
				ဟ		RR	
愷	FIRE SYSTEM (INCLUDING DELUGE, FOAM, SPRINKLERS) CO2	DELUGE, FOAM, SPR	INKLERS) CO2				
e	Failure of single fire Possible loss of	Preventive	Redundancy in	-	ပ _	က	Two pumps one in each
	redundancy	maintenance and	sdwnd				outboard engine room.
		inspections	Constant monitoring				Each pump provides
			of systems				100% requirement
			Availability of spares		_		Suction taken from
			and ability to		_		seawater ring main and
			effect repairs	_			can be operated from
					_		local fire pump control
							nanels

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

ENT HAZARD SSMENT HORIZON

RECOMMENDATIONS	/ COMMENTS				Fixed foam fitted to heliport, fuel system and tanks
RISK	RANKING L RR	7	0	2	ω
C	<u> </u>	Δ	ω	m	ω
	ဟ	-	-	-	7
MITIGATIONS		Alternative feed for frewater system from seawater system and foam pump	CCTV in certain areas Ability to isolate and repair. Blige and ballast systems	Ability to isolate and repair. Multiple fire hose stations positioned around rig.	Availability of portable foam and other systems Ability to effect repairs
PREVENTIONS		Preventive maintenance and inspections	Preventive maintenance and inspections including ultrasound and NDT Inspections and space audits	Preventive maintenance and inspections	Preventive maintenance inspections and testing
CONSEQUENCES		Reduction in or loss of fire water capability.	Possible damage from salt water spray. Loss of equipment Possible flooding and stability issue depending on affected area.	Possible loss of fire hoses on branch.	Loss of fixed foam protection
HAZARDS		Failure of both firewater pumps.	Rupture/leaking of ring main piping.	Failure of branch line.	Loss of foam system

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		RECOMMENDATION / COMMENTS						
	7	RISK RANKING	RR	9				
APPENDIX V		RAN	الـــ	4				
PPE			ဟ	2				
4		MITIGATIONS		Availability of	portable foam and	other systems	Ability to effect	repairs
MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEDMATED DOIZON	DEELWATER HORIZON	PREVENTIONS		Preventive	maintenance	inspections and	testing	
		CONSEQUENCES		Fire protection	degraded for	affected space		
Transocean		HAZARDS		oss of CO2 to any Fire	area			

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APPENDIX V

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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS	RAR	RISK RANKING	RECOMMENDATIONS / COMMENTS
				S L	RR	
SYSTEM: A(ACCOMMODATION HVAC INCLUDING CONTROL ROOM	INCLUDING CONTROL	ROOM			
Air Handling Unit(s)	ř	Preventive	Repair. Comfort	-	ო	
failure.	accommodation air	maintenance and	issue only.			
	conditioning.	inspections	CCR has a stand-			
			alone unit			
SYSTEM: SY	SWITCHGEAR ROOM HVAC	Q				
Air Handling Unit	Possible loss of some	Preventive	Redundancy in	-	က	
Failure.	systems to	maintenance and	systems			
	overheating of	inspections	Ability to effect	_		
	electrical		repairs			
	equipment.		Door s can be			
			opened to provide			
			some cooling by			
			ambient air			
SYSTEM: C	COLUMN VENTILATION					
				,	,	

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Redundant

ventilation fans. Ability to effect

maintenance and

pressurization of

space

Possible loss of

Loss of ventilation

SYSTEM:

Preventive

inspections

Possible gas spread to other areas with fire and explosion hazard.

repairs

က

ပ

Ability to effect

repairs

maintenance and

Preventive

No significant consequence

Loss of Supply fan.

MUD PIT/PUMP ROOM VENTILATION

MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON Fransocean

HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS	₽	RISK RANKING	RECOMMENDATIONS / COMMENTS
				S	R	
SYSTEM: FL	FUEL SYSTEM					
Hose break, spillage at loading	Environmental impact. Possible personnel	Fuel Transfer procedures	Personnel with radios on watch	<u>ო</u>	Б	
station.	injury. Possible fire hazard	including Declaration of	during transfers.			
		Inspections	Availability of medical			
		rig wide	Hoses tested			
1		Hose pressure tests	annually	+		
Leak in Hull Tanks.	Possible environmental	Preventive	Spill response.	2	A 16	
	Impact. Possible firel	maintenance and	Daily sounding of fuel		_	
	contamination	Periodic surveys by	Level indication in		_	
	Possible stability	class society.	tank.			
	issues.	•				
Fuel Oil Transfer	Fuel oil in bilge.	Preventive	Bilge alam.	-	ပ	Bilges are pumped to the
pump leak.	Fire hazard	maintenance and	Spare parts on			oily water separator
	firel on affected side	inspections	Doard. Ability to effect			
			repairs			
			Bilge pump isolation			
			Firefighting capability			
Fuel Oil Settling	Spillage.	Preventive	Firefighting capability	8	A 8	Settling tank is adjacent to
tanks leakage.	Possible fire hazard.	maintenance and inspections.				the warehouse and is marked
Fuel Oil Punifier	Possible dirty fuel to	Preventive	Redundant fuel oil		8	
failure.	engines.	maintenance and	purifiers.			
		inspections	Ability to feed Day	_		
		Monitoring for	Tanks from either			
		contaminated fuel	purifier.			

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	CONSEQUENCES	PREVENTIONS	MITIGATIONS		RISK	×	RECOMMENDATIONS
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				ဟ		R R	
Day Tank leak.	Spillage. Possible fire hazard.	Preventive maintenance and inspections	Contained in Engine Room before transfer to oily- water separator.	က	4	ω	
Failure of fuel pump to engine(s).	Loss of single engine.	Preventive maintenance and inspections	Firefighting capability Multiple redundant engines. Ability to reroute fuel supply	-	∢	-	A 15 minute day tank is fitted for each engine
Service oil transfer line failure.	Loss of auxiliary fuel supply to deck stations	Preventive maintenance and inspections	Ability to isolate line and effect repairs	-	∢	-	

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RECOMMENDATIONS	COMMENIS					
RISK	KANKING L RR		က	ဖ	a	2
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	ဟ		-	5	-	4
MITIGATIONS			Redundant HP compressors.	Stand-by accumulators charged at all times. Abiilty to effect repairs Availability of rental units	Ability to isolate individual bottle.	Possible ability to isolate line break. Hospital and medivac capabilities.
PREVENTIONS			Preventive maintenance and inspections	Preventive maintenance and inspections.	Preventive maintenance and inspections	Preventive maintenance and inspections Some HP air lines protected from impact.
CONSEQUENCES		HP AIR	Loss of redundancy.	Loss of ability to fill accumulator bottles.	Loss of air accumulation in bottle. Possible reduced tensioning capability. Possible reduced compensation ability.	Partial or complete loss of HP Air. Possible loss or reduction of tensioning capability. Possible loss or reduction of compensation ability. Possible personnel injury.
HAZARDS		SYSTEM: HE	Loss of single HP Compressor.	Loss of both HP Compressors.	Accumulator bottle relief valve fails open.	HP Air Line failure.

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RECOMMENDATIONS / COMMENTS	
RISK	S L
MITIGATIONS	
PREVENTIONS	
CONSEQUENCES	
HAZARDS	

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MAJOR ACCIDENT HAZARD	RISK ASSESSMENT	DEEPWATER HORIZON	
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No significant consequence. Shut down drilling Possible loss of well is failure occurs while cementing Loss or reduction of rig air supply to air consumers on branch.
branch Possible of air r

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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		₩.	RISK	RECOMMENDATIONS
					Š	RANKING	/ COMMENTS
				ဟ		R	
Rig air receiver relief valve fails open.	Loss of air to consumer fed by receiver.	Preventive maintenance and inspections	Ability to isolate air receiver and effect repairs Compressor will compensate for small leak.	-	Δ	7	
SYSTEM: DE	DRILLING						
Drawworks Failure.	Possibility of dropping	Preventive	Spare parts on	2	ത	17	
(Brakes)	block.	maintenance and	board.				
	Possible personnel	inspections	Availability of medical				
	injuries or fatalities.	Repairs with	treatment				
	Possible structural	approved spares	including medivac				
	damage.	only	Well control				
	Possibility of fire and	Proper adjustment of	capabilities.				
	explosion.	brakes					
Failure of load	Operations shut down	Preventive	Ability to effect	-	മ	7	
indication	immediately	maintenance,	repairs				
		inspections and					
		testing					

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				RA:	RANKING	RECOMMENDATIONS / COMMENTS
			တ		RR	
Possibility of drill string	Required inspections	Availability of medical	2	m	17	
Possible personnel	minimum but	including medivac				
injuries or fatalities.	done more often	Firefighting				
	Training and	EX Equipment on				
Possible of fire and	procedures.	Drill Floor.				
explosion	Observations while	Subsea well control				
dependent on	tripping	availability.				
Possible reduction of	area of operations	tools for each				
well control		string	_			
capability.						
Dropped string on Drill	Preventive	Availability of medical	5	m	17	
Floor	maintenance and	treatment		1	:	
Possible personnel	inspections	including medivac				
ties.	Annual inspections.	Ability to effect	_	_		
Possible structural	Training and	repairs				
damage.	procedures.	EX Equipment on				
Possible of fire and		Drill Floor.				
explosion. Possible reduction of		Subsea Well colling		_		
well control						
capability.				_		
Possible loss of well.						
Reduced well control	Testing x 2 weeks	Redundant lines,	2	മ	17	
capability.	Preventive	valves and	_			
Possible personnel	maintenance and	chokes.		_		_
injuries or fatalities.	inspections	Spares on board.				_
and	Training.	Cement system.	_			
	Periodic ultrasonic	Availability of medical				
Possible stuck drill	testing	treatment				
string.		including medivac				

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

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HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		Z X	RISK RANKING	RECOMMENDATIONS / COMMENTS
				ဟ	_	RR	
Choke & Kill manifold failure.	Reduced well control capability. Possible personnel injunes or fatalities. Possible fire and explosion. Possible stuck drill string.	Testing x 2 weeks Preventive maintenance and inspections Training. Periodic ultrasonic testing	Redundant lines, valves and chokes. Spares on board. Cement system. Availability of medical treatment including medivac	3	m	17	
Single Mud Pump Failure.	Possible reduction of ability to circulate. Possible impact on well control capability	Preventive maintenance and inspections	Redundant mud pumps. Riser boost pump	ო	Ш	61	
Multiple Mud Pump Failure.	Reduction in ability to circulate Impact on well control capability	Preventive maintenance and inspections	Redundant mud pumps. Riser boost pump Use of cement unit to circulate Shut in well and monitor on trip tank	м	ш	6	
Total mud pump failure	Impact on well control - inability to circulate	Preventive maintenance and inspections	Use of cement unit to circulate Shut in well and monitor on trip tank	4	∢	41	
SYSTEM:	Drilling Equipment Instrumentation	entation					

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	RECOMMENDATION / COMMENTS				
	RANKING	R.	5		11
APPENDIX V	RAN	_	O		ω
PPEN		ဟ	ო		ις.
4	MITIGATIONS		Manual pit volumes. Redundant pressure sensors. Spare parts on board. Mechanical indication on trip tanks. Third party logging unit.		Failsafe functioning of valves Spill response procedures Availability of medical treatment including medivac Ability to evacuate rig
MAJOR ACCIDEN! HAZARD RISK ASSESSMENT DEEPWATER HORIZON	PREVENTIONS		Preventive maintenance and inspections.		Testing, inspections and maintenance.
	CONSEQUENCES		Loss of downhole information. Possible well control situation	Riser / Diverter	Ser / Diverter Possible loss of well control. Possible loss of BOP. Possible personnel injury or death (possibly multiple). Possible blowout. (subsea, surface)
Transocean	HAZARDS		PVT failure, pressure sensor failure, flow indicator failure	SYSTEM: Riser	re / of riser.

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APPENDIX V

RECOMMENDATIONS / COMMENTS RR RANKING 17 17 RISK S L മ മ 2 of rig. Availability of medical including medivac Ability for evacuation MITIGATIONS EX equipment on Drill Floor. Ability to function BOP. procedures Spill response Gas detection system for treatment warning. **PREVENTIONS** and maintenance. Testing, inspections Possible blowout on rig floor with possible CONSEQUENCES Possible loss of riser Possible environmental possible loss of rig. multiple injuries or fatalities and ROPSYSTEMS impact HAZARDS Diverter failure. Control sy SYSTEM

			_			_							
	3												
	Redundant control	systems (yellow	and blue pod).	ROV intervention.	Spare parts on	board.	Redundancy in	control stations.	Availability of	medical treatment	including medivac	Spill response	procedures
	Testing, inspections	and maintenance.											
BOT SYSTEMS	Possible loss of BOP	control.	Reduced well control	capability.	Possible blowout with	possible multiple	fatalities and	possible loss of rig.	Possible environmental	impact			
YS I EIM: BC	ontrol system	failure.											

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MAJOR ACCIDENT HAZARD

	RECOMMENDATIONS / COMMENTS			
	RISK	RR	17	
APPENDIX V	RANI	_	ω ω	
PPEN		ဟ	v v	
A	MITIGATIONS		Redundant BOP components. Spare parts on board Ability to effect repairs Availability of medical treatment including medivac Spill response procedures Redundant pumps and lines. Accumulators on BOP. ROV intervention.	
MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON	PREVENTIONS		Testing, inspections and maintenance. Testing, inspections and maintenance.	
	CONSEQUENCES		Reduced well control capability depending on component Possible blowout with possible blowout with possible environmental impact Loss of some redundancy in control of BOP system. Reduced well control capability.	Possible blowout with possible multiple fatalities and possible loss of rig.
Transocean	HAZARDS		failure.	

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

ENT HAZARD ESSMENT R HORIZON

APPENDIX V

RECOMMENDATIONS power failure of pressure when hoisting personnel when hoisting personnel device (part of electronic drop in hydraulic system status so crane does not Hydraulic system protected Limit switches and sensors max wind speed 30.9 m/s Emergency winch release protects against crane / COMMENTS prohibits hoist and jib from overpressure by Permit to Work required Permit to Work required Spring loaded multi-disc brakes automatically pressure limit valves monitor position and applied in event of Load motion limitation motions in case of control) stops and being pulled off exceed limits overload 쫎 RANKING 17 7 RISK മ മ ဟ S S Availability of medical including medivac Availability of medical including medivac MITIGATIONS Availability of spare Ability to use other Ability to use other treatment treatment cranes. cranes wires cables annually or inspection by third **PREVENTIONS** maintenance and maintenance and Standard in place to Annual load testing Proper manifesting. Proper manifesting Operational limits change crane Load indication. oad indication. inspection. inspection. Preventive Preventive party Training. CONSEQUENCES Possible loss of crane. Possible equipment Possible equipment Personnel injury or Personnel injury or Possible structural damage. Possible structural Possible dropped Dropped load. Dropped load. damage. damage. damage. fatality. fatality boom. CRANES structural failure cable- boom or overloading or HAZARDS Failure of crane Failure of crane SYSTEM: -mooq hoist

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MAJOR ACCIDENT HAZARD	RISK ASSESSMENT	DEEPWATER HORIZON
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SYSTEM:
Lifeboat hook,
cable, davit or
winch failure.

		Permit to Work required when working on boats or for loading during drills	
		71	12
> <u>×</u>		<u> </u>	ω
APPENDIX V		φ	S
API		Availability of medical treatment including medivac Redundancy in means of evacuation.	Availability of medical treatment including medivac Redundancy in means of evacuation
MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON	V, RESCUES SYSTEMS	Maintenance, inspections and testing. Load testing. Training and procedures. Use of safety cables on boats during drills and maintenance Cables changed out on a regulated basis.	Maintenance, inspections and testing. Load testing. Cables changed out on a regulated basis. Training and procedures.
MAJOR A RISK DEEPV	ESCAPE AND EVACUATION, RESCUES SYSTEMS	Possible dropped lifeboat. Possible multiple personnel injuries or fatalities.	Possible dropped liferaft Possible multiple personnel injuries or fatalities.
Ö	ES	<u> </u>	

Liferaft davit, cable or winch failure.

HAZARDS	CONSEQUENCES	NUENCES PREVENTIONS	MITIGATIONS	RISK	RECOMMENDATIONS / COMMENTS
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MAJOR ACCIDENT HAZARD
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				ဟ		X	
SYSTEM: ST	STATION KEEPING						
Poss of single GPS	No immediate	No prevention for	24 hour manning in	-	ш	10	
	_	loss of GPS	control room	-	j	2	
			Constant monitoring				
			of station knowing				
			Training in				
			raining in				_
			folialia				
			scenarios		_		
l oes of multiple	Status is dearraded	No previoution for	Suspension of delling	,	7	5	
aidininining Seo	Status is degraded	ioi lioilianaid on	fillilling to linespecial	7	<u> </u>	2	
25	Possible loss of station	loss of GPS	operations				
	keeping ability		Continuous				
	Possibility of drive off		monitoring of		_		
	Possible well control		station keeping				
	incident		Training in		_		
	Possible environmental		emergency		_		
	impact		scenarios				
			Spill response				_
			ocindes indo				
1 oce of Accustice	Status is decreded	Drayontiva	24 hour manning in	,	٥	c	المحامة المائمين عن ممن
consport to seed	Possibility of drive off	maintenance	Control room	>		D	than the loss of CDS
	Doceible well control	Monitoring of hottony	Training in		_		
	Possible well colling	monitoring or pattery	and ming fill				
	Incident	Status	emergency				
	Possible environmental		scenarios				
	impact		Spill response				
			procedures		_		
			Redundancy with				
			GPS				
Loss of GPS and	Loss of station keeping	Preventive	24 hour manning in	2	4	16	
Acoustics	ability	maintenance	control room				
	Possibility of drive off	Redundancy in GPS	Training in				
	Possible well control	•	emergency		_		
	incident		scenarios		_		
	Possible environmental		Spill response		_		
	impact		procedures				
			Ability to shut in the		_		
	_		well				
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MAJOR ACCIDENT HAZARD
RISK ASSESSMENT
DEEPWATER HORIZON

RECOMMENDATIONS / COMMENTS				
SK KING	RR	_	8	12
RISK RANKING	7	m	ω	ш
	တ	m	-	7
MITIGATIONS		Redundancy with fire back up system	A precautionary "white alert" is issued to the rig floor	Redundancy in thrusters Heightened awareness and constant monitoring of station keeping Ability to effect repairs
PREVENTIONS		Constant monitoring Six hour DP checklist and transfer of control checks	Constant monitoring Six hour DP checklist and transfer of control checks	Preventive maintenance, inspections and testing Constant monitoring of systems
CONSEQUENCES		Station keeping at is degrades	No immediate consequence	No immediate consequences depending on weather/current conditions
HAZARDS		iDP-32 nic oning n t consoles R)	Loss of SDP-12 dynamic positioning system (fire backup) (including console in ECR)	Loss of single thruster

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

HAZARDS	CONSEQUENCES	PREVENTIONS	MITIGATIONS		RISK	RECOMMENDATIONS
				2	RANKING	/ COMMENTS
				S L	RR	
Loss of both	Degraded control	Preventive	Heightened	5 D	24	
n one	Possible loss of station	maintenance,	awareness and	_		
quadrant	keeping ability		constant		_	
	Possibility of drive off		monitoring of	_	_	
	Possible environmental	8	station keeping		_	
	impact	of systems	Ability to effect	_		
			repairs			
			Spill response			
			procedures			

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX VI

RECOMMENDATION STATUS TABLE

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MAJOR ACCIDENT HAZARD RISK ASSESSMENT DEEPWATER HORIZON

APPENDIX VI

ACTION TAKEN / REASON FOR NO ACTION	PPE not required as per definition of High Voltage. Signs have been ordered and are being put in place as they arrive	Signs posted	PPE not required as per definition of High Voltage. Signs have been ordered and are being put in place as they arrive	PPE installed Eyewash station installed	Signs posted	The Roustabout locker next to the crane pedestal is an approved farmmables storage area	Storage locker in place	PPE not required as per definition of High Voltage. Signs have been ordered and are being put in place as they arrive	Electrical Supervisor determined that Locker was not needed	Speaker installed	PPE not required as per definition of High Voltage. Signs have been ordered and are being put in place as they arrive
STATUS	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Clsoed	Closed
RESPONSIBLE PERSON	Electrical Supv. Chief Mate	Chief Mate	Electrical Supv. Chief Mate	Electrical Supv. RSTC	Chief Mate	Deckpusher Toolpusher	Toolpusher	Electrical Supv. Chief Mate	Electrical Supv.	Electrical Supv.	Electrical Supv Chief Mate
HAZARD RISK RANK	Medium	Low	Medium	Low	Unranked	Low	Low	Medium	Low	Unranked	Medium
RECOMMENDATION	R1: Consider providing High Voltage PPE for the A/C Unit Room. Also replace the sign detailing steps to take in electrical shock situation with one having larger typeface.	R2: Consider providing a sign for A/C Unit Room warning "Caution: Hot Surfaces"	R3: Consider providing High Voltage PPE for the Auxiliary MCC Room. Also consider placement of a sign detailing steps to take in electrical shock situation.	R4: Consider the installation of a PPE box for the Battery Room. Also consider the installation of an eyewash station for the battery room.	R5: Consider the placement of warning signs on the outside aft and fwd doors to the Cement Unit room warning of high noise levels.	R6: Consider the installation of an approved flammables storage locker for the port crane pedestal.	R7: Consider the installation of an approved flammables storage locker for the Driller's Store Room.	R8: Consider providing High Voltage PPE for the Electrical Equipment Room port fwd 2 nd deck. Also consider placement of a sign detailing steps to take in electrical shock situation.	R9: Consider the installation of an approved flammables storage locker for the Electrician's Shop.	R10. Recommend the installation of a PA speaker with adjustable volume in the hospital.	R11: Consider providing High Voltage PPE for the HVAC Room. Also consider placement of a sign detailing steps to take in electrical shock situation.

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RECOMMENDATION	HAZARD RISK RANK	RESPONSIBLE PERSON	STATUS	ACTION TAKEN / REASON FOR NO ACTION	KEN / D ACTION
R12: Two bottles of propane were found in a locker in the HVAC Room. Consider the installation of an approved flammables storage locker for this space.	Гом	1st Asst. Engineer	Closed	Bottles were removed and housekeeping routines will ensure material is removed after maintenance is performed	J and ss will ensure ifter . med
R13: Consider the provision of an approved oily waste disposal container for the machine shop.	Гом	Mechanical Supv.	Closed	Container in place	
R14: Consider the installation of an approved flammables storage locker for the Machine Shop.	Low	Mechanical Supv.	Closed	Locker in place	
R15: Consider providing High Voltage PPE for the MCC Room 3rd deck. Also consider placement of a sign detailing steps to take in electrical shock situation.	Medium	Electrical Supv. Chief Mate	Closed	PPE not required as per definition of High Voltage. Signs have been ordered and are being put in place as they arnve	per definition ered and are they arrive
R16: Consider placing "Warning - Hot Surfaces" signs on the mud lines in the mud mixing area aft of the sack store.	Low	Toolpusher Chief Mate	Closed	Investigation determined signs were not needed	ned signs
R17: Consider provision of an approved flammables storage locker and an oily waste container for the Center Mud Pump Room.	Low	Toolpusher	Closed	Housekeeping routines will ensure material is removed after maintenance is performed	es will ensure Ifter rmed
R18: Consider the placement of a sign detailing steps to take in an electrical shock situation in the Port fwd electrical thruster space.	Medium	Electrical Supv. Chief Mate	Closed	Signs installed upon arrival	arrival
R19: Consider the placement of a "High Voltage" warning sign on the door of the #1 Process Unit aft of the Bridge/CCR	Medium	Electrical Supv. Chief Mate	Closed	Determined upon investigation that sign was not needed due to voltage in space	estigation that due to
R20: Consider the installation of a smoke alarm in the ROV control van.	Low	Oceaneering RSTC	Closed	Alarm installed	
R21: Consider the provision of an oily waste disposal container for the Ship Service Air Compressor Room port.	Low	Mechanical Supv.	Closed	Housekeeping routines will ensure material is removed after maintenance is performed. Adjacent space has oily waste disposal container.	es will ensure after med. oily waste
R22: Consider the provision of an oily waste disposal container for the Standby Generator Room	Гом	1st Asst. Engineer	Closed	Housekeeping routines will ensure Material is removed after maintenance	es will ensure after
R23. Consider the provision of an approved flammable storage locker for the Subsea Workshop	Low	Subsea RSTC	Closed	Senior Subsea determined locker is not needed	mined locker
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DEEPWALER HORIZON	JEIZON				
RECOMMENDATION	HAZARD RISK RANK	RESPONSIBLE PERSON	STATUS	ACTION TAKEN / REASON FOR NO ACTION	
R24: Consider the provision of High Voltage PPE for the port 480V Switchboard Room.	Medium	Electrical Supv.	Closed	Determined to be low voltage area such that PPE is not needed	
R25: Consider extending the ladder from Thruster #5	Unranked	1st Asst.	Closed	No action taken . Investigation	_
lower space so that it extends above the deck in the upper		Engineer		determined that equipment in	_
part of the space so hook up can be made more safely.				place was sufficient.	
R26: Consider providing High Voltage PPE for the	Medium	Electrical Supv.	Closed	PPE not required as per definition	_
Transformer Room stbd. Also consider placement of a sign		Chief Mate		of High voltage.	_
detailing steps to take in electrical shock situation.				Signs have been ordered and are	
				being put in place as they arrive	_
R27: Consider special training for personnel in awareness	Unranked	RSTC	Closed	RSTC has provided the electrical	_
of electrical shock and steps to take when finding a	_			/maintenance dept with training	_
casualty (use of shepherd's crook). Consider developing a				video	_
presentation to run on the screen in the mess room.					_
					_

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