Notice of Change to Controlled Documents #44-50-- 20 May 2011

Notice #	Chapter and Section	Summary of Change
44	**Ch 7 Sec 16**	OSHA and ANSI references for PPE added.
45	**Ch 2 Sec 3.1 added**	Section added to address blood borne pathogens: Addresses potentially infectious materials other than blood Addresses exposure determination without regard to PPE. Stresses use of Universal Precautions States Hepatitis B Vacs are made available to employees
46	**New SOP-GEN-011B**	Adds Electrical Safety Includes preventions of electrical shock Includes precautions for working near energized or de-energized equip
47	**SOP-GEN-011C**	Adds maintenance/ inspection system for portable electrical equipment fleet wide
48	**SOP-GEN-011D and HSE chapter**	Adds guidelines for safe use, storage and inspection of Compressed Gas Cylinders; also added to HSE Manual
49	**Chapter 2 Sec 13.0 Management of Subcontractors**	Subcontractor performance evaluation, qualification or selection criteria, including audit of subcontractor and SSE's.
50	**New SOP-GEN-011E**	Respiratory Protection Program added to SMM

NOC #44

Chapter 7: Shipboard Operations
Section 16.0 - Personal Protective Equipment

Topic: OSHA reference added for PPE requirements.

All Chapters	All Topics
New Changes: Revision #8	***16.0 Personal Protective Equipment*** All personnel must use the PPE that meets the requirements **of OSHA Regulations 1910.132-138 and is** appropriate for the activity. **29 CFR 1920.132 (General Requirements)** **29 CFR 1910.133 (Eye and face protection)** **29 CFR 1910.135 (Head protection)** **29 CFR 1910.136 (Foot protection)** **29 CFR 1910.137 (Electrical protective equipment)** **29 CFR 1910.138 (Hand protection)** **PPE Must also meet the requirements for the maritime industry:** **29 CFR 1915.152 (General requirements)** **29 CFR 1915.153 (Eye and face protection)** **29 CFR 1915.155 (Head protection)** **29 CFR 1915.156 (Foot protection)** **29 CFR 1915.157 (Hand and body protection)** Each individual is responsible for the use of the proper PPE. The primary responsibility for enforcing the PPE requirements rests with the master and party chief. Individuals not following the PPE policy will be asked to leave the work area until they have all the required PPE. The only time PPE requirements are waved is during an emergency that requires immediate action to save life or property or protect the environment.

NOC #45

Chapter 2: General Company Policies
Section 3.1 Added - Blood Borne Pathogens

Topic: Blood Borne Pathogens section added.

All Chapters	All Topics
New Changes: Revision #8	***3.1 Blood Borne Pathogens*** Employees who become aware of any health-related issue, including pregnancy, should notify their supervisor of health status. This policy has been instituted strictly to protect the employee. The employee should also notify their supervisor if they become aware of any blood borne pathogen they come in contact with or acquire. Blood borne pathogens include Hepatitis B (HBV), Hepatitis C and Human Immunodeficiency Virus (HIV). Blood borne pathogens can be transmitted when infectious blood or other fluid is introduced into the bloodstream of a person. Transmission of blood borne pathogens in the workplace can occur through infected material being introduced directly into your body through a break in the skin, mucous membrane exposure - infected fluid enters the body through contact with a mucous membrane found in your eye, nose or mouth and through sexual contact. Hepatitis B vaccinations are available to employees if there is cause or reason. Universal precautions should be used whenever there is potential for exposure. Universal precautions include: • Personal Protective Equipment (PPE) – to be used at all times to prevent skin or mucous membrane contact with bodily fluids. Always inspect PPE for cracks, holes or other damage. Never use damaged PPE. • Wash hands or other skin surfaces thoroughly and immediately if contaminated. • When using sharp items (scalpels, needles, pipettes, etc.) that may be potentially contaminated, a puncture resistant container must be used for storage and disposal after use.

NOC #46

SOP-GEN-011B Electric Safety Program
Sections ALL – New SOP

Topic: New electric safety program added.

All Chapters	All Topics
New Changes: Revision #1	***1.0 Introduction*** TDI-Brooks Int'l has put in place an Electrical Safety Program to establish safe practices for the protection of our employees. Training on use of electrical tools and lock-out tag-out procedures for energized equipment can be found in SOP-GEN-011C and SOP-GEN-007J. ***2.0 Responsibility*** It is the responsibility of all employees to ensure that the procedures of the Electrical Safety Program are followed. ***3.0 Preventing Electric Shock*** For electric tools, preventing electric shock can be accomplished by following the pre-use inspection checklist, which includes checking the power cord for any defects, kinks or fraying. Power tools shall remain unplugged or removed from the power source when not in use. Any equipment that cannot be physically disconnected from its power source requires an energy isolation permit and lock out tag out procedures must be followed before any work can be done on it. ***4.0 Precautions*** In order to prevent injury, there are certain precautions that must be followed when working around energized or de-energized equipment. When planning to perform maintenance on any powered equipment, you must first complete a special permit for energy isolation and have it signed by the chief engineer or port engineer. The specific instructions for completing an energy isolation permit can be found in SOP-GEN-007J.

NOC #47

SOP-GEN-011C: Power and Hand Tools
Sections ALL – New SOP

Topic: New power and hand tools maintenance and inspection procedures added.

All Chapters	All Topics
New Changes: Revision #1	***1.0 Introduction*** TDI Brooks International has put in place maintenance and inspection procedures for portable power tools, including electrical, hydraulic, fuel powered and pneumatic power tools. ***2.0 Responsibility*** It is the responsibility of all employees to ensure that the power and hand tools are regularly inspected and maintained. TDI-Brooks Int'' has put a computer-based power and hand tool training and documentation program in place for its employees. ***3.0 References*** All electric power-operated tools will be used and maintained in accordance with OSHA regulation 1926.302 (a)(1-2), which states " Electric power operated tools shall either be of the approved double-insulated type or grounded in accordance with Subpart K of this part". Also, "the use of electric cords for hoisting or lowering tools shall not be permitted." All pneumatic tools will be maintained in accordance with OSHA regulations 1926.302(b)(1-10). All fuel powered tools will be maintained in accordance with OSHA regulations 1926.302(c) (1-2). All hydraulic powered tools will be maintained in accordance with OSHA regulations 1926.302(d)(1-2). ***4.0 Inspections*** Inspections will be conducted prior to use and before

	storage of any power tool. Inspections will be conducted in accordance with the manufacturer's specifications for each tool. Any tool found to be damaged, defective, or otherwise inoperable will be removed from service immediately. The tool must be serviced or replaced before use. ***5.0 Maintenance*** Maintenance will be performed per manufacturer's specifications for each tool. Any tool requiring maintenance or repair will be removed from service immediately.

NOC #48

SOP-GEN-011D Compressed Gas Cylinders
Sections ALL – New SOP

Topic: New procedures for use, inspection and storage of compressed gas cylinders added.

All Chapters	All Topics
New Changes: Revision #1	***1.0 Introduction*** TDI-Brooks Int'l has put in place procedures for the inspection, use and storage of compressed gas cylinders consistent with the requirements of the Compressed Gas Association pamphlet P-1-1965. ***2.0 Responsibility*** It is the responsibility of "the user" to ensure that the compressed gas cylinders are inspected regularly, stored safely and handled in the manner consistent with the training they have received. It is the responsibility of the HSE manager to provide training to all personnel who will be handling or using compressed gas cylinders. Those personnel who handle or use compressed gas cylinders will accept the training provided and pass a competency test prior to working with Compressed Gas Cylinders. Successful training will be documented and recorded by issuance of a training certificate. ***3.0 References*** All compressed gas cylinders will be handled in accordance with OSHA regulations in 29 CFR 1910.101. Gas cylinders used in welding/cutting operations will be handled in accordance with 29 CFR 1926.350. Compressed Gas Association Pamphlet P-1-1965 ***4.0 General Cylinder Safety*** • Accept only properly identified cylinders and do not rely on color codes. • Wear safety equipment appropriate for the hazard potential of the gas before beginning work.

	• If a cylinder or valve is noticeably corroded, the vendor should be contacted for instructions. • A leaking cylinder should be removed and isolated in a well-ventilated safe area. It may be necessary to call in trained emergency response personnel. • If the leak is at the junction of the cylinder valve and cylinder **DO NOT** try to repair! Instead, contact the supplier. ***5.0 Inspection, Storage and Use*** • Leave cap on and valve closed when cylinder is not in use. • Store cylinders upright • Regulators should only be used for the gas for which they were designed and should not be interchanged. • Do not force regulator connection fittings. • Never drag, slide, or roll the cylinder; never transport with the regulator in place; and secure the cylinder to a suitable hand truck or cart during transport. • Properly secure cylinders in a well-ventilated and protected area away from heat, flames, and the sun. • Segregated cylinders by hazard classes while in storage. • Discontinue use of the cylinder when it has at least 25 psi remaining; close valve to prevent air and moisture from entering. Return unused and empty cylinders to the vendor for reuse or refill. • Mark or tag empty cylinders "EMPTY" or "MT." Separate empty and full cylinders during storage. ***6.0 Precautions*** • DO NOT purchase more or larger cylinders than necessary; • DO NOT store flammable gases next to an exit or near oxygen cylinders; • DO NOT use copper fittings or tubing on acetylene tanks; • DO NOT use Teflon® tape on cylinder or tube fitting connections, which have metal-to-metal face seals or gasket seals; • DO NOT permit oil or grease to contact cylinders or their valves, especially cylinders containing oxidizing gases.

NOC #49

Chapter 2 General Company Policies
Section 13.0- Management of Subcontractors

Topic: Make sure we meet BP requirements in SMM.

All Chapters	All Topics
New Changes: Revision #7	***13.0 Management of Subcontractors*** The purpose of this policy is to provide guidance on HSE requirements to subcontractors. A sub-contractor who works on TDI-Brooks' property or under TDI-Brooks' prevailing influence must conduct their activities in a manner that is consistent with safe, healthy, and environmentally friendly operating practices and in accordance with all the applicable health, safety, and environmental rules and regulations. This policy applies to all sub-contractors who are expected to perform work or provide services for TDI-Brooks. **13.1 Requirements** The HSE program and record of each sub-contractor will be considered by TDI-Brooks' during the selection process. At TDI-Brooks' request, subcontractors may be required to provide their current HSE incident rates and/or other information as determined. It is the primary responsibility of each sub-contractor to provide a safe and healthy workplace for their employees. All sub-contractors must perform their work in accordance with all applicable local and national government regulations, as well as with the HSE policies and procedures of TDI-Brooks' or TDI-Brooks' clients. All subcontractors will provide their employees with appropriate medical examinations, drug screening, personal protective equipment (PPE), and survival at sea training before beginning work. All sub-contractors are responsible for ensuring that their equipment is in proper working condition and that any unsafe conditions will be corrected as soon as possible. All sub-contractors will conduct safety meetings for their employees or have their employees attend TDI-Brooks safety meetings, as well as monitor their work activities to help ensure safe working practices and conditions. The sub-contractor must document each safety meeting, stating the time, place, and subject discussed, and include each employee's signature. All sub-contractors will notify a TDI-Brooks supervisor immediately about all accidents involving their employees on TDI-Brooks' property or under TDI-Brooks' prevailing influence. All sub-contractors will comply with TDI-Brooks' alcohol and drug policy when performing work for TDI-Brooks or its

	clients. All subcontractors must comply with TDI-Brooks' policy for sub-contractors and communicate it to their employees. TDI-Brooks reserves the right to audit/inspect the sub-contractors' HSE program, equipment, and operations before and during performance of the work. **13.2 Subcontractor Evaluation** TDI-Brooks International will evaluate subcontractors based on their responses to our subcontractor survey. **13.3 Implementation** Local TDI-Brooks management is responsible for implementing this policy for each of its subcontractors. If a sub-contractor violates this policy, then the subcontractor will take prompt action to correct such violation to the satisfaction of TDI-Brooks management. Violation of TDI-Brooks' policy for sub-contractors, or any applicable policy of a TDI-Brooks client, or any applicable government law or regulation may be cause for immediate removal and revocation of access by the offending person to any TDI-Brooks or client property.

NOC #50

SOP-GEN-011E: Respiratory Protection Program New SOP

Topic: Respiratory Protection Program added to SMM.

All Chapters	All Topics
New Changes: Revision #1	• **Entire SOP follows starting next page**

SOP-GEN-011E
Respiratory Protection Program

Revision/ Review Log

Revision Date	Approved by	Reviewed by	Revision Details/ Proposal Notes
11 January 2010 Revision #1	Dr. Jim Brooks	Dr. Jim Brooks Dr. Bernie Bernard	Topic this SOP addresses

1.0 Introduction

TDI-Brooks International has determined that while employees on our vessels are not exposed to respiratory hazards during normal operations, there are some unusual circumstances that may expose these employees to harmful vapors that in some cases represent Immediately Dangerous to Life or Health (IDLH) conditions.

Examples of situations that may expose employees to IDLH conditions are exposure to high levels of H2S in the processing of geochemical cores, firefighting or confined space rescue.

1.1 *Processing geochemical or geotechnical cores* - On geochemical coring operations, we may take a core sample that contains hydrogen sulfide in amounts that the nose which has very high sensitivity to H2S can smell. In these cases, proper ventilation of the lab and processing areas by opening all doors, using fans and removing personnel from the lab until the majority of the gas dissipates precludes the need for a respirator.

1.2 Firefighting- All STCW endorsed personnel onboard a vessel have been trained in firefighting and may be called upon to participate in drills or to actively fight a real fire. SCBAs with negative pressure respirator masks are a standard part of firefighting gear.

1.3 Confined Space Rescue- According to SOP-GEN-007H, "***A confined space entry would only be made on this vessel if she were in a shipyard or in an emergency. The vessel may not carry the equipment necessary to evaluate the atmosphere of a confined space, should one be required outside a shipyard.*** " In the extremely unlikely event that a confined space rescue would be attempted, the atmosphere will first be tested for safety before any rescue would be attempted. If the ship did not carry proper testing equipment or if testing equipment indicated the atmosphere was unsafe, potential rescuers would be required to use an SCBA.

2.0 Scope and Application

This program applies to all employees who may be required to wear respirators during non-routine or emergency operations. Any employee who voluntarily wears a respirator when one is not required is subject to the medical, training and other requirements of this program and must be provided with a copy of Appendix D of Respiratory Standard 1910.134.

3.0 References

29 CFR 1910.134 Respiratory Protection Standard and Appendices A-D.

4.0 Responsibilities

The Program Administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

- Identifying work areas, processes or tasks that require workers to wear respirators and evaluating hazards. (See **Section 1**)
- Selection of respiratory protection options. (See **Section 2**)
- Monitoring respirator use to ensure respirators are used in accordance with their certifications.
- Arranging for and/ or conducting training. *Training is provided for SCBAs as part of STCW.*
- Ensuring proper storage and maintenance of respiratory protection equipment. . *Vessel Captains and Managers ensure proper storage and maintenance of SCBAs and EEBDs on the vessels*
- Maintaining records required by the program. *Maintenance records are maintained in NS-5 and audited by USCG/ABS, Clients and TDI-Brooks during vessel inspections.*
- Evaluating the program.
- Updating the written program as needed.

The Program Administrator for TDI-Brooks International is Kathleen Nease.
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Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure the employees under their charge also understand and follow the program. Duties of the supervisors include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing and annual medical evaluation.
- Ensuring the availability of appropriate respirators and accessories.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring respirator fit well and do not cause discomfort.

- Ensuring that respirators are properly cleaned, maintained and stored according to the respiratory protection plan.
- Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

Each employee has the responsibility to wear his or her respirator when required and in the manner in which they were trained. Employees must also:

- Care for and maintain respirators as instructed and store them in a clean, sanitary location.
- Notify their supervisor if the respirator does not fit well, and request a new one that fits properly.
- Notify their supervisor or the Program Administrator of any respiratory hazards they feel are not adequately addressed in the workplace and of any other concerns they may have regarding the program.

5.0 Procedures

The Program Administrator will select respirators (SCBAs and EEBDs) to be used based on the hazards to which workers may be exposed and in accordance with all OSHA standards (see **Section 1**). The Program Administrator will conduct a hazard evaluation (Job Safety Analysis or JSA) for emergency situations in which a respirator may be required. The hazard evaluation will be revised as needed and will include:

5.1 A list of the potential respiratory hazards an employee may face

5.2 Steps to mitigate those hazards

5.3 The type of respirator to use in specific emergency situations

6.0 Respirator Use and Inspection

TDI-Brooks International has vessels deployed all over the world, and as a result, different equipment by different manufacturers may be used on any given vessel. The table below shows the basic respirator types that may be encountered on our vessels.

Basic Respirator Types used by TDI-Brooks International			
Type	**Potential Uses**	**Potential Users**	**When needed**
SCBAs Self contained breathing apparatus	Firefighting, Confined Space Rescue	SCTW trained crew	As Required
EEBDs Emergency escape breathing devices	Escape from the ship in an emergency which compromises the atmosphere	Any employee	As Required
Paper filter masks (disposable)	Sanding, spray painting	Any employee	Voluntary

7.0 Cleaning, Maintenance and Storage

Respirators will be cleaned, maintained, inspected and stored according to manufacturers' instructions.

8.0 Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approved label- which must not be removed or defaced during use.

9.0 Medical Evaluations and Fit Testing

No medical evaluations or fit testing are required since respirators are for emergency use only.

10.0 Definitions

The following definitions are important terms used in the respiratory protection standard in this SOP.

Air –puirfying respirator: means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air – purifying element.

Atmosphere-supplying respirator: means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge: means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Demand respirator: means an atmosphere-supplying respirator that admits breathing air into the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Employee exposure: means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI): means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator: means a respirator intended to be used only for emergency exit.

Filter or air purifying element: means a component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering facepiece (dust mask): means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepeice composed of the filtering medium.

Fit factor: means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test: means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator to an individual.

Hood: means a respiratory inlet covering that completely covers the head and neck and may also cover portions of he shoulders and torso.

Immediately dangerous to life or health (IDLH): means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Interior structural firefighting: means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

Loose-fitting facepiece: means a respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting): means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere: means an atmosphere with an oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP): means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of this section.

Positive pressure respirator: means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure inside the respirator.

Powered air-purifying respirator (PAPR): means an air-purifying respirator that uses a blower to force ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator: means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by exhalation.

Qualitative fit test (QLFT): means a pass/ fail test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT): means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering: means the portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

Self contained breathing apparatus (SCBA): means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life: means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

This section: means the respiratory protection standard 29 CFR 1910.134.

Tight-fitting facepiece: means a respiratory inlet covering that forms a complete seal with the face.

User seal check: means an act conducted by the respirator user to determine if the respirator is properly seated to the face.