

SUBSEA PIPELINE INSPECTION AND REPAIR

Team Information Sticker

RANGER CLASS SCORE SHEET

ROVs in Extreme Environments: Science and Industry in the Arctic

Company CEO: _____

Product demonstration station officials: _____

Safety Check and Set-Up (up to 10 points total)

- 5 points – Company presents signed safety inspection sheet.
- 5 points – Vehicle and control system present no safety hazards.

Examples:

- o All power cords, power bars, pressurized cylinders, etc. are secured.
- o No hazardous materials are leaking onto the pool deck.
- o Vehicle is hand-launched by team members in a safe manner.

Company is cleared for demonstration: _____ (official’s initials) _____ total points (out of 10)

Note: An official’s decision to disqualify a company due to safety concerns is final. If there is a safety concern, please contact the lead safety inspector or competition coordinator.

Check here if the company presented you with a JSA (Job Safety Analysis).

Organizational and Operational Effectiveness (up to 10 points total)			✓
• Up to 2 points – Organization			
o Chain of command evident	1		_____
o Roles clear and executed well	1		_____
• Up to 3 points – Task Plan			
o Task plan is well thought out to maximize score	1		_____
o Alternate plans available	1		_____
o All team members are aware of the plan	1		_____
• Up to 2 points –Time Management			
o Awareness of time	1		_____
o Adjusting timeline to adapt to situations	1		_____
• Up to 3 points – Team Cooperation			
o Composure under pressure	1		_____
o Supportive of each other	1		_____
o Team communicates well with each other	1		_____
Total points (out of 10)			_____

Penalty Points

Tether pulling: Issue a warning for the first infraction. Begin deducting points AFTER the first infraction.

Illegal communication: Company members at the side of the pool may not communicate visual evidence of the ROV status (location, need to turn, etc.).

Diver assistance: Companies will be penalized for diver assistance during a product demonstration run. Diver assistance will be provided ONLY AFTER a company requests it. During a product demonstration run, the clock will not stop for diver assistance. Companies WILL NOT be penalized for diver assistance once the product demonstration time has ended. At this time the divers will assist the ROV to the surface as part of the company’s 5-minute demobilization period.

Debris: Companies that leave debris (e.g. parts of their ROV, including weights and flotation) in the pool such that a diver must retrieve the debris will also receive penalty points. Product demonstration props are NOT considered debris. A company constructed collection basket is considered debris.

Fuses

If a vehicle blows the MATE power supply in-line fuse, the company is allowed one spare. If the vehicle blows the second MATE fuse, the product demonstration performance period is over. The company will receive points for the product demonstration tasks that they have completed up to that point but will not receive a time bonus score.

RANGER Product Demonstration Task Scoring Breakdown:**Task #2: Subsea pipeline inspection and repair (up to 100 points)**

Task #2: Subsea pipeline inspection and repair	Scoring – up to 100 points
Judges' Notes: The steps of the pipeline inspection task must be done in order. The steps of the wellhead preparation task must be done in order. Companies may insert the bolts on one flange before installing the second flange (2.8 and 2.9).	
2.1 5 points – conducting a CVI of an oil pipeline to locate the corroded section	_____
2.2 10 points – turning a valve to stop the flow of oil through the pipeline	_____
2.3 5 points – examining a gauge to determine that the pipeline oil pressure is zero	_____
2.4 up to 10 points – measuring the section of corroded pipeline	_____
o 10 points - ≤ 3 cm off true length	
o 5 points – 3.01 cm to 10 cm off true length	
o 0 points - > 10 cm off true length	
2.5 10 points – attaching a lift line to the corroded section	_____
2.6 5 points each, 10 point total – pulling two pins to simulate cutting the pipeline	_____
2.7 5 points – removing the section of corroded pipeline and returning it to the surface	_____
2.8 5 points each, 10 point total – installing a flange over both sides of the pipeline	_____
2.9 5 points each, 10 point total – inserting one bolt to secure the flange to the pipeline	_____
2.10 5 points – removing the wellhead's protective cover	_____
2.11 5 points – installing the gasket into the wellhead	_____
2.12 5 points – replacing the wellhead's protective cover	_____
2.13 5 points – inserting the hot stab into the port on the wellhead	_____
2.14 5 points – removing the hot stab and returning it to the surface	_____
TOTAL POINTS FOR TASK #2 _____	

SCORING SUMMARY WORKSHEET

The purpose of this sheet is to allow you to verify and tally scores from the previous pages.

SAFETY CHECK & SET-UP					
Signed safety inspection sheet	0				5
Vehicle and control system present no hazards	0				5
ORGANIZATION					
Company is effectively organized to undertake the product demonstration	0	1	2	3	4 5
	6	7	8	9	10
Safety check, set-up, and organization point total:					
Task #2: Subsea pipeline inspection and repair (up to 100 points)					
Conducting a CVI of an oil pipeline to locate the corroded section	0				5
Turning a valve to stop the flow of oil through the pipeline	0				10
Examining the dial to determine the pressure is at zero	0				5
Measuring the corroded section of pipeline	0		5		10
Attaching a lift line to the corroded section of pipeline	0				10
Pulling two pins to simulate cutting the section of corroded pipeline	0		5		10
Removing the section of corroded pipeline and returning it to the surface	0				5
Installing the flange adapter over both sides of the cut pipeline	0		5		10
Inserting one bolt on each flange to secure the flanges to the pipeline	0		5		10
Removing the wellhead's protective cover	0				5
Installing the gasket into the wellhead	0				5
Replacing the wellhead's protective cover	0				5
Inserting the hot stab into the port on the wellhead	0				5
Removing the hot stab and returning it to the surface	0				5
Task #2 point total:					

PENALTY POINT DEDUCTIONS	
*Illegally pulling tether _____ infractions X - 5	
*Illegal communication _____ infractions X - 5	
**Diver assistance _____ infractions X - 5	
*** Leaving debris in the pool _____ infractions X - 5	
Exceeded 5-minute demobilization period _____ minutes X - 1 =	

TIME BONUS	
1 point for every minute and 0.01 point for every second under 15 minutes	
Duration of Product Demonstration: _____	
Minutes under 15 remaining: _____ X 1 point = _____	
Seconds remaining: _____ X 0.01 point = _____	
Time bonus	
TOTAL PRODUCT DEMONSTRATION SCORE	

Official's initials: _____ **Company CEO's initials:** _____