1. PURPOSE

To establish operating procedures for the DYNACON CTD Traction Winch

2. SCOPE

This procedure applies to the Deck Department and CTD winch operators.

3. RESPONSIBILITY

It is the responsibility of the Chief Mate and to ensure operators are informed of these procedures and trained in the theory and operation of the DYNACON CTD Traction Winch

4. PROCEDURE

4.1. CTD Traction Winch Controls and Indicators

4.1.1 HPU High Voltage Enclosure

4.1.1.1. HPU Start (Pushbutton)
When depressed- Starts 75 KW (100 HP) electric motor. Power Unit will not start if control joystick is out of the neutral (Center) position

4.1.1.2. Power Fault (Indicator Lights)
When Red Light is LIT – indicates a power fault is present. Winch will not start if fault condition is detected. Fault may be caused by improper phase, or low voltage. Note: This red light will be LIT upon initial power up and will remain lit for a few seconds until power status check is complete prior to OK light coming on

4.1.1.3. Power OK (Indicator Light)
When Green Light is LIT – Indicates power is OK

4.1.1.4 HPU Stop (Pushbutton)
When DEPRESSED – Stops 75 KW eclectic motor.

4.1.1.5 Bypass Emergency Start Switch
This switch is located inside the enclosure and is to be used for across-the-line starting in emergency situations where the normal reduced voltage motor starter circuit is not operating properly. This Operation will be Performed by either the Chief Engineer or First Assistant Engineer.
4.1.2. Local Control Enclosure

4.1.2.1. Traction Winch Brake Release (Indicator Light)
When LIT – Indicates winch control handle is out of neutral position and fail safe brake is released.

4.1.2.2. Traction Winch Payout/Haul In (Control Handle)
When control handle is moved in the PAYOUT direction – traction winch pays out cable

When control handle is moved in the HAUL-IN direction – traction winch hauls-in cable

4.1.2.3. Storage Winch Payout/Haul In (Control Handle)
When control handle is moved in the PAYOUT direction – storage winch pays out cable

When control handle is moved in the HAUL-IN direction – storage winch hauls-in cable

4.1.2.4. Storage Winch Brake Release (Indicator Light)
When LIT – Indicates winch control handle is out of neutral position and fail safe brake is released.

4.1.2.5. Mode Select Auto/Manual (Switch)
When the switch is toggled to the AUTO position – Storage Winch maintains storage tension and hauls in or pays out cable in response to the traction winch

When the switch is toggled to the MANUAL position – Storage Winch is released from the AUTO mode and operates independently of the traction winch.

4.1.2.6. Auto-Mode Enable (Light)
When LIT – storage winch is in the AUTO mode

4.1.2.7. Proof of Tension (Light)
When the light is LIT, pressure switch is enabled by motor pressure

4.1.2.8. HPU Running (Light)
When LIT, Indicates the Power Unit is running
4.1.2.9. Line Monitor Display
Provides front panel programmable and selectable display of count, speed, and tension from sensors installed in the system.

Line Count Indicator counts UP when paying out cable and counts DOWN when hauling in cable

Line Speed provides a digital display of line speed (meter per minute)

Line Tension Display provides a digital display of line tension (in pounds)

4.1.2.10 Remote Enable/Disable (Switch)
When switched to ENABLE position, the Remote Control is enabled.

When switched to DISABLE position, the Remote Control is disabled.

Remote control cannot be ENABLED if the remote control handle is out on neutral.

4.1.2.11 Remote Select (Toggle Switch)
Toggles to either Lab Remote or Aft Remote.

4.1.2.12 Remote Enable (Light)
When LIT, Indicates the select Remote Control Station is active.

4.1.2.13 Tension Low/High (Toggle Switch and Indicator Light)
When toggled to LOW, actuates the low tension haul-in circuitry used during CTD launch and recovery.

When toggled to HIGH, actuates the high tension haul-in circuitry used during normal operations. Low Tension indicator light is LIT during low tension operations.

4.1.2.14 Low Tension Enabled (Indicator Light)
When LIT indicates the low tension haul-in circuit is actuated.

4.1.2.15 HPU Stop (Pushbutton)
When DEPRESSED – Stops the 45 KW electric motor. To restart, the start button at the high voltage enclosure would have to be actuated.
4.1.3 Traction Winch AFT Remote Control and Lab Remote Control Enclosure Controls and Indicators

4.1.3.1 HPU Running (Indicator Light)
When LIT – indicates HPU is running

4.1.3.2 Remote Enable (Indicator Light)
When LIT – Indicates remote control has been activated from the Local Control Station.

4.1.3.3 Traction Winch Brake Release (Indicator Light)
When LIT – Indicates winch control handle is out of neutral position and fail safe brake is released.

4.1.3.4 Levelwind Overtravel (Light)
When LIT – indicates the levelwind sensor is forced beyond its normal travel limits

4.1.3.5 Emergency HPU Stop (Pushbutton)
When pushed, removes power from electric motor and stops power unit

4.1.3.6 Traction Winch Payout/Haul In (Control Handle)
When control handle is moved in the PAYOUT direction – traction winch pays out cable

When control handle is moved in the HAUL-IN direction – traction winch hauls-in cable

4.1.3.7 Line Monitor Display
Provides front panel programmable and selectable display of count, speed, and tension from sensors installed in the system.

Line Count Indicator counts UP when paying out cable and counts DOWN when hauling in cable

Line Speed provides a digital display of line speed (meter per minute)

Line Tension Display provides a digital display of line tension (in pounds)

4.1.4 CTD TW Pressure Gauges

4.1.4.1 Return Pressure (0-60 psi Gauge)
Monitors return pressure to tank after return flow passes through a heat exchanger
4.1.4.2 Storage Winch Charge Pump Pressure (0-600 psi Gauge)

4.1.4.3 Traction Winch Charge Pump Pressure (0-600 psi Gauge)

4.1.4.4 Traction Winch “A” Port Pressure (0-5000 psi Gauge)

4.1.4.5 Traction Winch “B” Port Pressure (0-5000 psi Gauge)

4.1.4.6 Storage Winch “A” Port Pressure (0-5000 psi Gauge)

4.1.4.7 Storage Winch “B” Port Pressure (0-5000 psi Gauge)

4.1.4.8 Auxiliary Pump Pressure (0-3000 psi Gauge)

4.2 CTD Traction Winch Starting and Operation

4.2.1. Visually check .322 wire to ensure it is run tight and there is not any loose cable from Storage Drum through Level wind, Traction Winch, Fairlead Sheaves, through Crane Pedestal Sheaves and Boom Sheaves to deck unit. If Not Pull Slack Cable By Hand Working from Storage Winch to Deck Unit

4.2.2. Visually check Levelwind to ensure it is in line with wire on Storage Drum and .322 wire is tightly wrapped and not crossed over or gapped. If Not You May Have To Pay Out Wire Slowly Until Warps Are Tight On Storage Winch. The Levelwind Should Self Align. ALWAYS HAVE TENSION ON WIRE WHEN PAYING OUT CABLE

4.2.3. Visually check CTD Winch to ensure that there are not any oil leaks. If a Leak Or Oil Spill Is Detected Notify The Mate On Watch Who In turn Will Contact The Engineer On Watch. DO NOT START THE WINCH.

4.2.4. Ensure that the main power breaker is closed in the Main Control Station. This breaker is normally left closed when frequent operation of the CTD winch is required.

4.2.5. Turn Main Power Switch, located on the HPU High Voltage Enclosure to the “ON” position. After a few seconds the “RED” power FAULT light will go out and the “GREEN” power OK light will be LIT.

4.2.6. Push the “START” Button also located on the HPU High Voltage Enclosure. And the HPU will start running. Wait a few seconds for the motor to get to speed and pressures are up.
4.2.7. On the Local Control Enclosure the “GREEN” HPU Running Light is LIT and the “AMBER” Low Tension Enabled light is LIT.

4.2.8. Move the Storage Winch handle down slowly and the “AMBER” Storage Winch Brake Release light will come on. Continue moving the handle down slowly until the “AMBER” Proof of Tension Light is LIT.

4.2.9. With the Proof of Tension light LIT toggle the MODE SELECT to AUTOMATIC and the “AMBER” Automatic Enabled light is LIT and release the Storage Winch Handle. Now all operation will be with the Traction Winch Handle.

4.2.10. Ensure Tension is on the cable and no one is standing in a Bight of cable. Slowly, push down on the Traction Winch Handle and the Traction Winch Brake Release light will be LIT. The Traction Winch and Storage Drum will both move with a constant tension between the two. Continue to take up cable, taking care not to lift the deck unit.

4.2.11. ONLY After the Bridge gives the OK then you may deploy the deck unit when directed by personnel in charge of deck unit.

4.2.12. Slowly lower Traction Winch Handle and the deck unit will rise off the deck, you may have to pay-out cable to keep the deck unit at a fixed height while the Crane positions the deck unit over the stern and deck personnel can control swing of unit.

4.2.13. When deck unit is over the side and instructed to lower unit, do so until unit is totally submerged. You may be asked to raise unit slightly and zero Meter Read-out.

4.2.14. To Zero Meter Read-out depress the Reset button on the Line Monitor Display NOTE: Meter Read-out can only be Zeroed from the Local Control Enclosure.

4.2.15. To change to High Tension toggle switch to High Tension and “AMBER” Low Tension indicator light will go out. High Tension is used in normal operation of the winch and Low Tension is used only during recovery and launching of deck unit.

4.2.16. To shift winch control operation Toggle Remote Select to either LAB Remote or AFT Remote then Toggle Remote switch to enable and “AMBER” Remote Enabled light is LIT and “AMBER” light of station selected is LIT. Now all operations of winch are controlled from Remote Station. NOTE: When in Remote operation and the Traction Winch Control
Handel is moved on the Local Control Enclosure. The winch control is lost in the Remote location and transferred to the Local Control Enclosure. In addition when the Storage Winch Control Handle is moved when in Remote operation, the winch control is lost in the Remote location and transferred to the Local Control Enclosure and all Proof of Tension is also lost. **This is not an acceptable way to transfer control.**

4.2.17. When in a Remote operation location there is a “RED” Levelwind Over Travel indicator light, When LIT you should stop the winch as soon as possible. Notify the Bridge and LAB and visually inspect the Levelwind, the Light indicates the Levelwind sensor is forced beyond its normal operation.

4.2.18. To transfer control back to Local Control Enclosure stop winch at Remote location and on Local Control Enclosure toggle Remote Enable/Disable switch to DISABLE and control is transferred to the Local Control Enclosure.

4.2.19. Before lifting the deck unit out of the water toggle Low/High Tension switch to Low Tension, the “AMBER” Low Tension Indicator Light should become LIT.

4.2.20. When transferring the deck unit from the water to the deck the winch operator must work together with the crane operator to ensure the unit is kept with a small whip to decrease swinging and lowered so deck personnel are able to hook tag lines or to steady unit by hand when brought over the deck. Always lower deck unit slowly and smoothly to the deck.

4.2.21. When paying out cable or slacking the wire always make sure someone is pulling tension on the winch, **Do Not Pay Out To Fast,** the cable has to run a long distance over several sheaves, and the possibility of Bird Caging the wire on the Traction Winch is highly likely.

4.2.22. To secure winch and shut down HPU first toggle Mode Select Auto/Manual switch to Manual this will cause loss of tension between Storage Winch and Traction Winch and the “AMBER” Proof of Tension Light will be extinguished. Now you are able to shut down HPU by depressing the STOP button. Secure the power by turning the Power Switch to OFF and the “GREEN” Power OK Indicator Light will extinguish. Winch is secured.

4.2.23. When you are operating the winch you are in charge, you may be in a position where you can see on coming swells better then those on deck and may have to wait for calm between the seas or swells to lift the deck unit to the water or on to the deck. You may also see something like a jumped sheave or some other unsafe condition that will damage unit or machinery
and or cause injury to personnel and you have the right to stop operations until these problems are addressed. Before deployments and recoveries you are responsible to ensure work vest and hard hats are worn by those involved in the deck operations and that those not involved are clear and out of the way. Keep the Bridge informed at all times. You are the eyes and ears of the Mate on watch. It is also your responsibility to keep the Bridge informed of the wire angle, Call the Bridge even when the wire angle is straight; they can not see the wire.

5 TRAINING

6.1 All winch operators will be trained in the use and operation of the DANACON CTD Traction Winch and certified by the Chief Mate to operate the winch.