

3. Two independent sources of pump power are required on each closing unit installation and shall meet all IAOC specifications.
4. The accumulator pumps should be regulated to automatically recharge the accumulator when the pressure drops 10 percent or more below the accumulator's rated pressure. Valve control handles will not be left in neutral position.
5. The accumulator must be located at least 50 feet from the well. Blowout preventer controls must be properly labeled.
6. Fluid lines from accumulator to BOP's and all remote control fluid lines shall be steel, and rated at or above maximum BOP pressure. Lines shall be routed in bundles and adequately protected from damage. Flexible armored piping with a minimum pressure rating of 3000 psi is acceptable in the protected areas under the substructure for BOP control lines.

#### ACCESSORY EQUIPMENT

1. Upper kelly cock is required and shall be 3000 psi minimum w.p. with an ID equal to or larger than the kelly ID.
2. Safety valve shall be available on the rig floor with connection or subs to fit any tool joint in the string. Valve to be full bore 5000 psi working pressure minimum with an ID equal to or larger than the drill collar ID.
3. Drill pipe back pressure valve (inside BOP) with compatible connection shall be available on rig floor. The OD should be no larger than the drill pipe tool joint OD.
4. Extensions and hand wheels to be installed and braced at all times.
5. Valve operating handles will be installed on at least one of each type and size of valve on blowout preventer and choke manifold.

#### BOP CLOSING PROCEDURE

1. On wells with shallow surface casing ( $\pm 500'$ ), BOP should not be closed to record SIDP and/or SICP in the event of abnormal flow from the well bore. The flow should be diverted through the bleed line and/or choke line to prevent possibility of underground blowout.