ALERT 98-02

Kelly Wear and Damage

While making a connection in the mousehole to continue drilling, the driller was spinning the kelly to make up a joint. The hold-down nuts broke loose, allowing the kelly bushing housing to open. One of the hold-down nuts dropped onto a floorman, hitting him in the back of the head and neck. The floorman was treated for a contusion and released.

It was found that the hold-down nuts had failed due to corrosion.

The contractor recommended regular maintenance and inspection of kelly units to avoid recurrences. This should include:

- Check driving surface of rollers. Maximum allowing wear is 1/16" on hex kelly rollers and 1/8" on square kelly rollers. (NOTE: these dimensions were specific to the kelly units used by this contractor--check manufacturer's recommendations.)
- If rollers show maximum wear, take bushing apart, take rollers out and turn 180 degrees so new driving surface of roller will contact the driving edge (1") of the kelly. (NOTE: these dimensions were specific to the kelly units used by this contractor--check manufacturer's recommendations.)
- Be sure hold-down nuts are tight. Place a bar under the rollers and pry upward. Maximum allowable movement is 1/8". If movement is over 1/8" this indicates worn journals, bearings, roller pins or thrust washers. (NOTE: these dimensions were specific to the kelly units used by this contractor--check manufacturer’s recommendations.)
- Replace lock pins on thrust washers when worn or broken (to keep thrust washers from turning and wearing out roller pins and inside journal area of kelly bushing body).
- Replace worn or broken “O” rings on thrust washers. (Prevents mud from entering bearings.)
- Replace kelly wiper rubber when it fails to clean kelly.

Good maintenance and replacement of worn parts as required will eliminate kelly wear and damage.