Wyo

FATALITY NARRATIVE

Rodney Leon Caddy
Nabors Drilling USA, LP
307816330/P1128

Date & Time of Accident: March 30, 2006 4:00pm

Notification: Troy Gear, Safety and Health Coordinator for Nabors Drilling, reported the accident to Wyoming Workers' Safety Compliance Supervisor, Johnnie Hall on March 31, 2006 at 12:05pm.

The Investigation:
On March 31, 2006, Johnnie Hall, following the notification that an accident occurred on Nabors drilling rig # 521, assigned investigators Wayne Dvorak and Ken Lantta to investigate. On March 31, 2006, investigators Dvorak and Lantta departed for the accident scene. Upon arrival at the site, investigators supplied Rodney R. Foreman, Health and Safety Director for Nabors Drilling USA, LP, with a contact sheet and conducted an opening conference. Company personnel had preserved the accident site prior to the investigators' arrival. Investigators performed a visual inspection of the accident site, took photographs and a video. The site was then released back to Nabors Drilling USA. Taped interviews were conducted with on-site personnel. Investigators were notified on April 1, 2006, that Rodney Caddy had expired.

Deceased or Injured:
Rodney Leon Caddy

Address:
1671 Alabama
Green River, Wyoming

Occupation:
Tool Pusher

Employer:
Nabors Drilling USA LP

Accident Site:
Rig located at Sec28, T25N, R96W near Wamsutter, Wyoming 82336

Employees Present at the Time of the Accident:

Name	Firm	JobTitle
Rowdy Lenn McPeters	Nabors Drilling	Floorhand
Danny Gene Yarbrough	Nabors Drilling	Floorhand
Derek Gene Yarbrough	Nabors Drilling	Derrickman
Robert Owen Merrick	Nabors Drilling	Tool Pusher
Rodney Leon Caddy	Nabors Drilling	Tool Pusher (deceased)

Employees Interviewed during the Investigation:

Name	Firm	JobTitle
Rowdy Lenn McPeters	Nabors Drilling	Floorhand
Danny Gene Yarbrough	Nabors Drilling	Floorhand
Derek Gene Yarbrough	Nabors Drilling	Derrickman
Lee Hutchinson	Nabors Drilling	Superintendent
Jamie Huff	Nabors Drilling	Superintendent
Robert Owen Merrick	Nabors Drilling	Tool Pusher

EMPLOYEE:

Rodney Leon Caddy (deceased) was hired as a floor hand by Nabors Drilling USA on January 1, 2004. During his employment with Nabors Drilling, Rodney worked all rig positions and was promoted to Tool Pusher on Nabors Rig # 926 on March 1, 2006.

Events leading up to the Accident:

Derek Yarbrough worked as a derrickman on rig # 521 before being promoted to driller. Derek was the driller on rig # 521 for about two months. During his time as driller, Derek had backlashed the drill line and put excessive pressure on the drill bit. Because of these mistakes, on March 26, 2006, Nabors drilling superintendent Jamie Huff bumped Derek back to derrickman. With Derek bumped back and a personnel shortage, Rodney Caddy, tool pusher for rig #926 located in the Jonah Field, was sent to rig #521 as driller.

At this time, the drill hole depth reached 11908.2 feet. During the process of adding a section of pipe, the evening tower crew dropped the pipe string about six feet. After picking up the pipe string and setting the Kelly, drilling commenced for about 100 feet. Because the pipe string was dropped, the decision was made to trip the hole and check the "bottom hole assembly" bit and mud motor. After tripping to 4289.8 feet, the chain on the input sprocket for the drawworks became loose breaking teeth on the sprocket, shutting down the operation. A two-inch line was fastened to the stem to maintain circulation. The sprocket had to be replaced before drilling operations could continue. It was 2 ½ days, before the sprocket was replaced. Drilling operations commenced on March 30, 2006.

Robert Merrick, Tool Pusher, was on the brake handle when drilling operations resumed, and picked up on the slips to see if the pipe would move. It would not. Robert estimated

the down hole string weight was about 150,000 pounds. He could pull up to 70% of the string weight. Robert placed the rotary transmission in low/low forward. With the table rotating in a clockwise direction, Robert picked up the pipe string and pulled to 220,000, rotating clockwise attempting to drill through the stuck position. This procedure was not only stretching the drill pipe but also twisting and coiling it as well. Being unsuccessful in attempting to drill through the stuck position, Robert set the pipe string in the slips and rotated counterclockwise untwisting the pipe string. Robert instructed the crew on the drill floor to change the saver sub (a short section of pipe positioned between the Kelly and the drill pipe to prevent damage to the Kelly) that had pulled threads from the previous hole. Robert Merrick did not give specific instructions to any one person on the drill floor. He assumed Rodney Caddy, being the driller and senior person on the floor, would make the decision on changing the saver sub. Before leaving the drill floor to contact Drilling Superintendent Jamie Huff, Robert left instructions with the crew to change the saver sub.

The Accident:

On March 30, 2006, a new input sprocket was installed on rig #521. The rig was deemed operational sometime between 2:30 and 3:00pm. Derek picked up the Kelly placed in the pipe string and used the breakout tong to separate the saver sub from the Kelly. Floorhand Rowdy McPeters located the new saver sub and using the air tugger located on the off driller's side, lifted the sub from the catwalk to the drill floor. The new saver sub was then placed in the pipe string. Once the new sub was placed in the pipe string, Rodney went into the doghouse to get the chain tong. The chain tong was fitted with a 37" handle and is designed to grip pipe in either direction. Returning to the drill floor, Rodney placed the chain tong on the saver sub to tighten it up. Because the replacement saver sub was longer in length, Derek said he told Rodney that he would raise the Kelly to make it easier to tighten the sub to the pipe string. According to Derek, he engaged the clutch, raised the Kelly about 3-4"above the saver sub and disengaged the clutch. When Rodney began to tighten the saver sub to the pipe string, the pipe string began to uncoil (counter clockwise) at a very high rate of speed. While holding onto the handle of the chain tong, Rodney was lifted from the drill floor and forced backwards into the drawworks causing him to loose his grip on the handle of the chain tong. Rodney began falling to the drill floor. Because the chain tong has the ability to grip in either direction, and with the uncoiling of the drill pipe, it remained on the uncoiling drill pipe to the drill floor. The handle on the chain tong began striking Rodney as he was falling. Before reaching the drill floor, Rodney was struck several times to the body and head by the handle. Once the pipe stopped uncoiling itself, floorhand Danny Yarbrough attempted to pull Rodney to safety. Before Danny could reach Rodney, the pipe string suddenly started to reverse (now rotating in a clockwise direction). The handle struck Danny in the leg knocking him to the drill floor. When the pipe string finally stopped uncoiling itself, Danny and Derek removed Rodney from the drill floor and carried him into the doghouse. Derek immediately ran to the tool pusher's trailer and told Robert Merrick of the accident. Due to the remote location of rig #521, life flight was dispatched from Casper, Wyoming. Rodney was transported to the Casper Medical Center. Rodney expired on Saturday, April 1,

2006.

Findings:

- Nabors Rig # 521 was relocated from South Texas.
- Second fatal accident on Nabors Rig # 521.
- Life Flight One was dispatched from the Wyoming Medical Center.
- Rodney Caddy was taken to the Lander Valley Regional Medical Center, was stabilized, and then taken to the Wyoming Medical Center in Casper, Wyoming.
- According to the Coroner's report dated May 10, 2006, toxicology was not performed.
- The chain tong was designed for the job and was in good condition prior to the accident.
- At the time of the accident, the Kelly air spinner motors were not operational and needed replaced.
- It is not uncommon practice to use pipe spinners during drilling operations.
- Pipe spinners located on the drill floor were not used.
- Pusher had a reasonable budget and authority for rig repairs and improvements.
- Rig Pusher Robert Merrick had prioritized a repair list for Rig # 521.
- March 30, 2006, a new input sprocket on the drawworks was installed.
- January 2006, Derek Yarbrough was promoted to the driller's position.
- Derek Yarbrough was the driller on rig # 521 for about two months.
- Per Drilling Superintendent instructions, Derek Yarbrough was bumped back to derrickman on March 26, 2006.
- Derek Yarbrough was bumped back to derrickman and was not authorized to be operating the drill rig.
- Jamie Huff instructed pusher Robert Merrick to make sure Derek was not running Rig #521. Robert concurred to follow his instruction.
- Derek's first time changing a saver sub was at the time of the accident.
- Danny Yarbrough had one-week experience working on a drill rig.
- Rodney Caddy was a tool pusher on Nabors rig # 926.
- On March 28, 2006, Rodney Caddy was assigned as driller on rig # 521.
- Rodney had knowledge Derek Yarbrough had been bumped back to derrickman.
- Floorhand Rowdy McPeters was operating the air tugger on the off driller's side. With drill pipe in the derrick, it was questionable what Rowdy saw, since his view of the rotary table would be partially blocked.

Analysis & Conclusions:

Derek Yarbrough was operating the drillers console on rig #521. Derek said after the saver sub was positioned on the drill pipe in the rotary, he told Rodney he was going to pick up the Kelly to make it easier to tighten the saver sub to the drill pipe. Derek said he raised the Kelly about four inches above the saver sub and disengaged the clutch. In just a few seconds the drill pipe in the rotary table started to uncoil rapidly in a counter-clockwise direction. Derek stated, "I'm not doing anything, I'm not even on the controls".

It was not established who directly appointed Derek Yarbrough to operate the drilling rig. Before leaving the floor, Robert Merrick left instructions with the floor crew to change the saver sub. Derek assumed position on the brake handle. No one on the floor contested. It may be that the deceased, Rodney Caddy himself, never contested that Derek was on the brake handle. Knowing Derek had previous drilling experience on # 521 and with inexperienced floor hands, Rodney may have thought it would be safe practice for him to operate the chain tongs and replace the saver sub.

Although there may be other explanations for what happened with this accident, our investigation results suggest the following two scenarios are the most plausible:

Scenario #1:
When Tool Pusher Robert Merrick was operating the driller's console attempting to free the drill pipe, he positioned the table in low/low forward and using the elevators picked up on the drill string and rotated the table clockwise, attempting to free the drill pipe from the stuck position in the drill hole. This procedure was not only stretching the drill pipe but also twisting/coiling it as well. Being unsuccessful with this procedure, he set the drill pipe back into the slips and rotated the table counterclockwise, untwisting the drill pipe. However, it is unknown if the counterclockwise revolutions to untwist the drill pipe equaled the clockwise revolutions made when attempting to free the pipe. Therefore, it is possible that the drill pipe was still stuck, twisted and coiled. The actions by the rig crew while attempting to change the saver sub could have dislodged the drill pipe. Depending on how much it was still twisted and coiled, the drill pipe could rotate with tremendous energy in a counterclockwise direction and then in a clockwise direction until the stored energy in the drill pipe was dissipated.

Scenario #2:
Rig #521 is a mechanical rig. Its rotary table was not lockable. At the time of the accident, the rotary transmission was positioned in low/low forward. The locking mechanism for the rotary table lever on the driller's console was not placed in the locked position, which would have prevented the rotary table from accidentally being engaged. According to Derek Yarbrough, who was operating the driller's console at the time of the accident, he started to raise the Kelly about 3-4 inches above the saver sub and disengaged the clutch. It was only about five seconds after the clutch was disengaged that the drill pipe in the rotary table started to untwist (rotating counterclockwise). After untwisting itself counterclockwise, the drill pipe reversed itself and started rotating clockwise until all the stored energy in the pipe was dissipated. It is possible that instead of raising the Kelly as Mr. Yarbrough intended, he inadvertently engaged the rotary table. This action would cause the drill pipe to be rotated clockwise. Since the pipe was apparently still stuck in the hole, the pipe would be twisted and coiled. When the rotary table was disengaged, the drill pipe would untwist in a counterclockwise direction. It is also possible that moving the drill pipe with the rotary table caused the drill pipe to come unstuck in the hole. When the rotary table was disengaged, the stored energy already in the twisted and coiled drill pipe could have been released causing the drill pipe to rotate first counterclockwise and then

Another factor that presents an ever-present hazard for rig crews is fatigue. Rig #521 was operating on two 12 hours tours. The crews typically work several days in a row before going on days off. The work on a drilling rig is also very physically demanding. Shift work under these conditions can increase the potential for operator/employee error.

The above listed scenarios do not reflect this agency's belief in any particular sequence. However, specific safety actions may prevent this from occurring in the future.

Recommendations:

- Brief all employees on the facts and circumstances of this fatal mishap.
- Ensure a Job Safety Analysis (JSA) is completed prior to performing the task, so all employees involved have the knowledge to perform the task safely.
- Ensure all control levers on the driller's console equipped with a locking device(s) that are not in use are locked out.
- All employees should constantly assess the operation for safety hazards. If an employee(s) is positioned in a potentially hazardous location, stop the operation and correct the potential hazard immediately.
- Ensure only highly trained, experienced, and authorized employees are allowed to operate drilling rigs.

This report and incorporated findings relate specifically to this particular incident. The employer and employees continue to have the responsibility for inspection and investigation towards compliance with safe operating practices as outlined in the applicable rules and regulations.

The above investigation and findings of the accident occurring to:

Rodney Leon Caddy
1671 Alabama
Green River, Wyoming 82935

State of Wyoming, is set down and attested to this date

Date: Oct 19, 2006

Wayne Dvorak
Investigator WY OSHA