# SAFETY ALERT

**Safety Alert No. 451**
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## Body Mechanics, Lifting Techniques, and Repetitive Motion Lead to Strain Injuries

*Reenactment of recent injury due to excessive force and awkward body position*

The Bureau of Labor Statistics (BLS) tracks occupational injuries, illnesses, and fatalities in the United States on an annual basis. Sprains, strains, and tears are categorized as Musculoskeletal Disorders (MSD) for these statistics. In 2020, the Bureau determined MSDs are a leading cause of nonfatal occupational injuries, with 157,290 cases attributed to strains alone. A strain occurs when a muscle or tendon is stretched or torn.

The number of MSD injuries is increasing in frequency throughout the Gulf of Mexico Region. Most of these MSDs were due to repetitive motion, overexertion, and awkward lifting and pulling techniques. The following are incidents BSEE reviewed that occurred in the last five months, for your awareness:

- A mechanic using a breaker bar to loosen a nut sustained a strain injury in his right shoulder.
- While testing blowout preventers, an operator was in the process of closing a plug valve with an extension handle and sustained a strain injury in his lower back.

- An electrician was bending over to move batteries inside a Supervisory Control and Data Acquisition (SCADA) battery box and sustained a strain injury with muscle spasms in his lower back.
- An individual reported to the medic with the complaint of feeling a "pop" behind his left knee while transitioning from a stairwell onto the drilling deck.

The potential for strain injuries can be reasonably anticipated as associated hazards are present in the offshore work environment. Steps must be taken to mitigate the risks for strain injuries. The two most applicable contributing factors are Ergonomics and Individual Risk Factors.

1. **Ergonomic Risk Factors** include excessive force loads on the human body, extreme repetition, and awkward posture. To mitigate the risks associated with ergonomic hazards, engineering and administrative controls must be appropriately evaluated.
2. **Individual Risk Factors** include poor work practices, overall health habits, rest and recovery, and nutrition and fitness. To mitigate the risks associated with individual risk factors, employees should be trained in all aspects of human performance and ergonomics. Additionally, implement early intervention processes to recognize MSD early warning signs to prevent them from developing into an injury.

Putting ergonomic and administrative controls in place, to reduce the risks associated with MSD injury hazards, is part of the company's responsibility to provide a safe workplace for its people.

**Therefore, BSEE recommends that operators and their contractors, where appropriate, consider the following:**

- Ensure all workers are appropriately trained to recognize and mitigate the risks to MSD injuries.
- Review OSHA's ergonomic guidelines and implementing the Solutions to Control Hazards: https://www.osha.gov/ergonomics.
- Review OSHA's Sprains and Strains in Construction/Pulling Cables video: https://www.osha.gov/vtools/construction/pullingcables-fnl-eng-web.
- Develop and implement early intervention processes to recognize early MSD warning signs to prevent them from developing into an injury.

- Establish evaluation and corrective action procedures to periodically assess the effectiveness of the ergonomic process, and to ensure its continuous improvement and long-term success. As an ergonomic process is first developing, assessments should include determining whether goals set for the ergonomic process are being met, and to determine the success of the implemented ergonomic solutions.

– BSEE –

Category: Personnel Safety

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist avoiding potential incidents on the Outer Continental Shelf.