

**Nuclear Plant Orders Biach's New RPV Stud Tensioning Equipment**

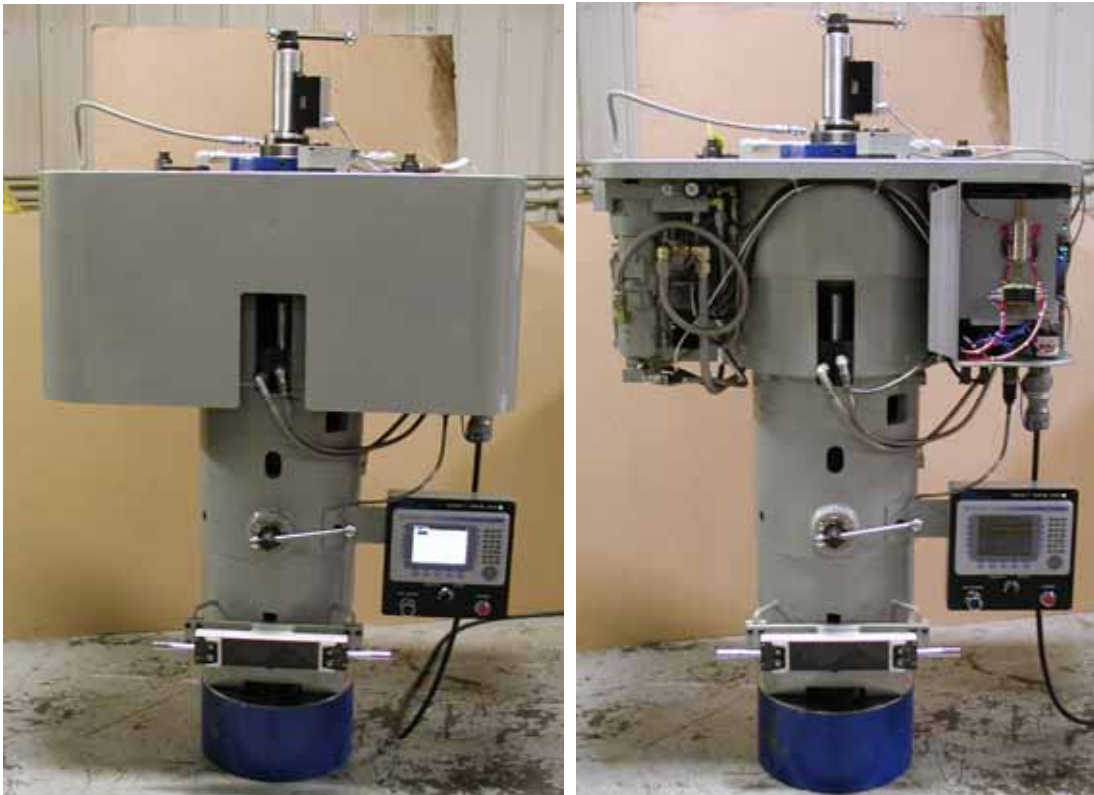
Biach Industries, Inc., of Cranford, New Jersey, has announced it has received an order from the **Southern Nuclear Company** for a new RPV stud tensioning system for use on the **J.M. Farley** nuclear reactor head. The contract calls for 4 of Biach's new "SCT" (self contained tensioner) stud tensioners which include dedicated pumping systems built onto each tensioner in place of the large central pumping station and multiple interconnecting hoses. Floor space is improved, rigging time is shortened and potential hose leakage is eliminated. The core of the tensioner is Biach's widely used "QD-H" (quick disconnect helical) design which uses the turn-of-the-switch latching means of stud engagement to the current stud's helical thread form. Built into the QD-H pull system is Biach's EMS (elongation monitoring system) which provides instantaneous elongation reading feedback from the tensioner to the control panel screen. This feature eliminates the uncertainty of inconsistent or inadequate nut seating which leads to the need to perform trim passes if readings are outside of the required range. The tensioner has full hydraulic operation (no air required) including pressurization, low pressure hydraulic piston return and low pressure pull system latching function. The control panel includes Biach's LCD communication system which provides distinct text instructions to the tensioner operators to assure error free operation and coordinated performance. In addition, Biach is providing "long life" (10 yr) seals throughout the stud tensioner to reduce regularly required maintenance costs.

The J.M. Farley plant is a Westinghouse PWR plant located in Ashford, Alabama.

Biach Industries has, for over 50 years, provided custom designed stud tensioners for numerous critical bolting projects and specially designed stud turnout and elongation measurement equipment. Its stud tensioning systems are used in approximately 90% of the U.S. commercial nuclear plants and in many overseas.

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## **SCT: SELF CONTAINED TENSIONER**



*Photos depict single stage unit on test block with cover on & off – showing on board pumping unit (left side) and valve manifold and electronic controls (right side). Swivel eyebolts will be mounted in Top Plate. Control Panel location shown for demonstration purposes only and are repositioned for stud height clearance..*

### **SCT provides:**

- *Hose Free Operation > No rigging or hose management issues; No hose leakage.*
- *Improved Floor Space Management > through On Board High Flow Pumping System*
- *One man operation > Hoist Control Handles for up/down and left/right movement*
- *Turn-of-the-switch Stud Engagement > through QD or QD-H Latching Designs*
- *Elimination of Trim Passes > with Elongation Monitoring System (EMS)*
- *Safety Interlocks > Built in Limit Switches Monitor Piston Travel and Latching*
- *Interconnecting Communication > using LCD text style status and instructional screens*
- *Quick Change-out Components > through modular design*

Power: 460-480VAC at 10 amps

High Speed Industrial Network Communication Protocol

Communications via Cat 5 Ethernet Cable bundled with power distribution cable

Pressurization time: less than 10 seconds

Accuracy: +/- 15 psi at 10,000 psi maximum pressure

Optional Wireless Communication

Optional 10 Year "Long Life" Hydraulic Seals

*continued.....*

A new SCT includes all of the current features of the widely successful QD-H



**QD Latching:** The split puller bar socket latches, through hydraulic action and a cam driven sleeve, to the RPV stud by simply turning a switch. The stud tensioner is fully hydraulic: latching, pressurization, piston return and unlatching.



The **EMS – elongation monitoring system** – to verify accurate and consistent nut seating to assure proper load retention in the stud and nut. This eliminates the potential need to perform a trim pass.

And, **Electronic Limit Switches** to monitor piston travel (for over stroke and piston return) and pull system latching



**Hoist and Tractor Control Handles** to permit one man to move the stud tensioner left or right around the bolt circle and lower or raise it over the studs.



**Control Panel with LCD Screen** to provide text instructions to operator to perform operational steps. Screen also depicts status of other stud tensioners for coordinated operation.

Control Panel includes “Latch / Unlatch” switch, Nut Signal Button (to signify to other stud tensioner operators that this nut has been seated or unthreaded) and Emergency Stop Button.

The EMS readings are displayed for all stud tensioners on each screen to allow operators to coordinate lifting off and moving to subsequent stud locations once reported readings are verified.