

FIELD NOTES By Ann Chambers, Associate Editor

Seabrook cuts outage with pumping system

Two years ago, Seabrook Nuclear Plant personnel attended an operations and procedures workshop where a new electric hydraulic pumping system for tensioner operation was described. This was the "EPN" series, introduced by Biach Industries Inc., located in Cranford, N.J.

"The maintenance team at Seabrook is always alert to improved procedures," said Jim Clemence, Seabrook's mechanical maintenance supervisor. "They strive to keep abreast of the latest and greatest technologies that are introduced to the field-always consistent with reasonable capital outlay." Seabrook is sited in Seabrook, N.H., for the North Atlantic Energy Corp.

The system increases hydraulic flow rate and improves accuracy through a closed-loop pressure circuit. Feedback of system pressure through a calibrated pressure transducer enables the high pressure to be maintained with an accuracy of plus or minus 0.1 percent. For example, a typical 10,000 psi tensioning system can be controlled to within plus or minus 10 psi. The promised results were two-fold -faster tensioner operation and more repeatable loading from series to series of studs leading to trim pass reduction. Both results

would create worthwhile savings in critical path time. Seabrook has traditionally used a two-pass sequence for both detensioning and retensioning. For the next outage, pass-and-a-half detensioning and pass-and- two-thirds tensioning would be used.

Performance

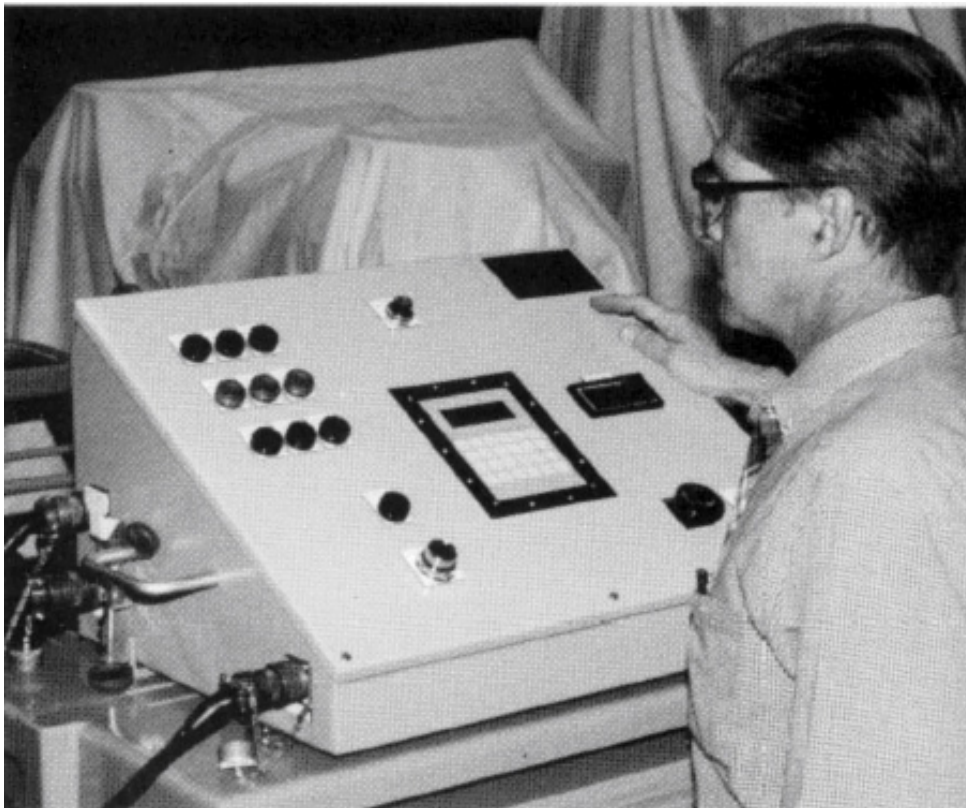
The Seabrook maintenance team was delighted with the system's performance. The detensioning process had previously required six to eight hours of critical path time. Using the reduced pass methods, the process now required less than two hours. The retensioning process, which has required six to eight hours also, now used only 100 minutes of critical path time. Both of these times were achieved using three older-style tensioners, which had been modified two outages before with the addition of a Biach puller bar drive motor for speed.

Seabrook also operated the optional built-in printer to provide a printed record of each program sequence in the tensioning process. The maintenance team found that mechanics using the three tensioners were averaging just three to three and a half minutes per stud. With 54 studs at

three minutes each, the new process produced a four hour or more drop in critical path time.

Seabrook management hopes to further reduced required time for the tensioning sequence at the next out- age. An hour and a half total time for either tensioning or detensioning is anticipated, Clemence said. EPN from Biach improves flow in extreme-pressure nuclear detensioning and retensioning applications.

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Power Engineering for
BIACH INDUSTRIES,
75 Chestnut St., Cranford, NJ 07016
Telephone 908-276-3110
FAX 908-276-0815



The EPN is a computer-based control technology which improves flow in extreme-pressure nuclear detensioning and retensioning applications.