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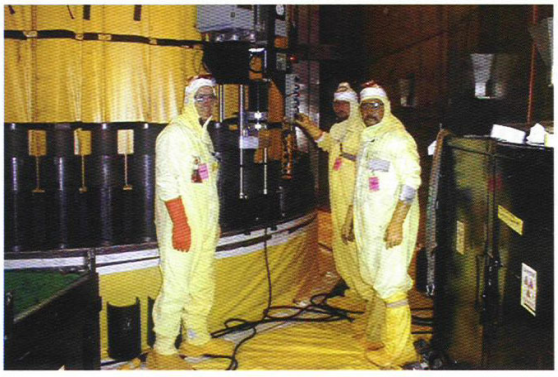
Tooling upgrades improve nuclear plant outages

In recent months, a number of nuclear plants have improved their outage maintenance capabilities with the purchase of new or upgraded tools from Biach Industries, Cranford, NJ. For instance, the San Onofre station, owned by Southern California Edison Co., Rosemead, Calif, purchased helical quick disconnect stud tensioners.

First Energy Corp's (Akron, Ohio) Beaver Valley station and PG&E's (San Francisco, Calif) Diablo Canyon station purchased electric stud drive tools to improve stud removal and insertion procedures during refueling outages. The new, electrically operated tool replaces earlier pneumatically driven tools, relieving workers of the task of absorbing breakaway torque during rotation (Fig 1). A data recorder for taking, storing, and stud-elongation readings also was part of the order.



1. Better maintenance tools are helping US nuclear stations improve their refueling outages. Here, Biach Industries' new electric stud drive tool is being used at the Diablo Canyon plant.

The Browns Ferry plant, owned by Tennessee Valley Authority, Knoxville, installed Biach's new tensioner communications box, which facilitates communications between the centrally located pump operator and individual tensioner operators during tensioning of the reactor integrating pressure vessel (RPV) head. Nuclear plants use variations of three, four, six or eight individual tensioners. During tensioning of the RPV head studs in an April outage, the new communications box helped Browns Ferry staff reduce the overall RPV head tensioning time from two hours, five minutes to one hour, fifteen minutes (Fig 2). The communications box is particularly useful at Browns Ferry because its RPV head has 92 studs, compared to the 54 to 76 designed in most RPV's.

Exelon Corp., Chicago, Ill, has added a total of 10 stud elongation measurement tools for outages at its various nuclear generation sites. The hand carried units will provide portable backup to the plant's main stud-elongation measurement tools, and will be used for taking quick and accurate elongation readings during high-dose, critical path outage tasks. The 10 units are configured to accommodate a variety of vessel/stud geometries at Exelon's fleet of plants.

2. New communications equipment helped TVA's Browns Ferry station reduce the time required to tension its reactor pressure vessel head from two hours, five minutes to one hour, fifteen minutes. The vessel has 92 studs.

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