

Maintaining MOV Stem Nuts: Out-Of-Sight, Out-Of-Mind No More

Written by Special To Maintenance Technology
Monday, 13 June 2011 09:25



This new, non-intrusive diagnostic tool makes the job of quantifying critical thread wear faster and easier than in the past.

On rising stem valves, a stem nut transfers motor-operated or manual valve rotational motion, or torque, to axial stem movement, or thrust. When a stem nut fails to operate, it will prevent valve operation and may cause an inaccurate display of valve position in a control room. For motor-operated valves (MOVs) that are electrically interlocked, the situation can also result in a costly or catastrophic failure event.

Non-intrusive stem-nut wear measurement began in nuclear power plants with MOV diagnostics—which are required by the Nuclear Regulatory Commission (NRC) to verify the operability of valves needed to safely shut down a nuclear power plant during an emergency event . Unfortunately, many industrial and process plants are not proactive in their approach to maintaining stem nuts and monitoring their wear, perhaps due to:

- The difficulty of predicting failure—which could take many years to occur.
- The intrusive nature of direct inspection of stem nut threads—which until now has typically required removing the stem nut to inspect the threads.

Reducing the barriers

The Stem Nut Analysis Protractor (SNAP) is a patent-pending tool designed to reduce the

Maintaining MOV Stem Nuts: Out-Of-Sight, Out-Of-Mind No More

Written by Special To Maintenance Technology
Monday, 13 June 2011 09:25

barriers to checking stem-nut wear by providing a faster, non-intrusive method to quantify stem-nut thread wear. The SNAP tool does not require removal of the stem nut, and the valve can remain in service while the analysis is conducted. The SNAP tool measures the backlash between the stem and stem-nut threads on a rising stem valve and provides measurement readings in a percentage of wear that can be more accurate than a traditional analysis.

Excessive stem-nut thread wear represents a potential common cause of failure on rising stem MOVs. The possible consequences demonstrate the importance of incorporating improved monitoring methods and maintenance practices including proper stem cleaning and lubrication. Periodic, non-intrusive stem-nut-thread measuring, like the described method using a SNAP tool, may also be key to preventing failures. **MT**

Conducting A SNAP Test On Your Motor-Operated-Valve Stem Nuts Can Help:

- Give you the information needed to target replacement candidates.
- Allow replacement planning.
- Increase the probability of finding various actuator/valve problems.

**The Shaw Group
Baton Rouge, LA**

For more info, enter 30 at www.MT-freeinfo.com