B&W Roll Wheel® Pulverizer Maintenance

SAFETY ALERT
WARNING

Plant Service Bulletin

Purpose

This Plant Service Bulletin is a reminder to verify the integrity of special maintenance tools before use, to review the recommendations for proper use of those tools, and to follow the procedures set forth in the B&W Roll Wheel Pulverizer® Operating and Maintenance manual when making any repairs or performing maintenance.

Problem/Risk

Major maintenance on B&W Roll Wheel pulverizers (formerly MPS pulverizers) requires rigging and lifting of heavy equipment using specially designed tools and specific procedures. THE USE OF DEGRADED TOOLS OR IMPROPER PROCEDURES RISKS SERIOUS EQUIPMENT DAMAGE AND PERSONAL INJURY.

Background

Babcock & Wilcox Power Generation Group, Inc. (B&W PGG) is occasionally notified of problems or potential problems encountered during major pulverizer maintenance activities. These problems are typically related to degraded special tools, improper procedures, and altered or degraded pulverizer components. At many plants, replacement of the grinding elements (tires and ring segments) and gear box removal are done infrequently, so maintenance personnel often need to learn or re-learn the special procedures each time the work is performed. It is vital that maintenance and plant personnel review and follow the pulverizer repair and maintenance procedures set forth in the B&W PGG Operating and Maintenance (O&M) manuals so that repairs and maintenance are performed properly and safely. Also, the special tools may be lost, poorly stored, degraded, damaged in prior use, or used for other, unintended purposes. Those special tools must be replaced before work is begun. Work of this type should never be undertaken with improper, damaged or degraded tools.

The maintenance tools and procedures were engineered for B&W PGG original parts. Both replacement in-kind and upgrade parts supplied by B&W PGG are typically engineered to accommodate the same tools and procedures. In some cases, B&W PGG may supply new tools and procedures to accommodate upgraded parts. Parts supplied or altered by others (non-B&W PGG) may not accommodate the tools and procedures. Some pulverizer components may wear or corrode so that the tools and procedures cannot be used as intended. Alternate tools and procedures should be carefully engineered.

The following is a list of reported or potential problems:

Roll wheel removal

General

- Pivot pins not removed, or not adequately banded to the roll wheel assembly, allowing the pivot pins to fall out and cause equipment damage and personal injury.
- Damaged tapped holes in the ring seat or improper fasteners preventing proper mounting of the roll wheel turnbuckle assemblies.
- Damaged tapped holes or eroded lifting lugs on the roll wheel assembly preventing proper use of handling fixtures.
- Loading rods or cables binding in the housing penetration seal, retaining some spring compression. Although the rod/cable appears unloaded, this stored energy could suddenly release.
- Spring frame screw jacks and clevis assemblies interfering with stationary components. The jack and clevis could be damaged, releasing the frame.

Fork truck removal method

- Use of the wrong fork truck.
- Use of a fork truck with inadequate counter weights.
- Improper attachment and use of the roll wheel lifting bracket.
- Improper mounting and use of special fork truck attachment.

Floor jack removal method

- Corroded tapped holes and/or fasteners in jack base plate imbedded in concrete floor.
- Improper attachment and use of roll wheel tilt-out bracket.
- Improper rigging.

Yoke jacking (for gear box removal)

- Damaged jack assemblies.
- Damaged jack pad surface on yoke tabs not providing stable bearing surface for jacks.
- Yoke does not separate from gear box output adaptor, putting an off-balanced or excessive load on jacks. The yoke has tapped holes in its base for jack bolts to separate the yoke from the output adaptor. Either these jack bolts were not used, or the threads in the yoke were corroded, preventing the jack bolts from bottoming-out against the output adapter.

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- Internal interference limiting lift height, or putting excessive load on jack. Some rotating throat assemblies have conical outer walls that prevent lifting the yoke high enough to clear the drive dowels for gear box removal. B&W's conical rotating throats were intended to be removable. Some other suppliers' replacement throats may not be removable.
- Before attempting to raise the yoke in preparation for gear box removal, the yoke air seal (YAS) will need to be raised and temporarily supported. To raise the YAS, it must be detached from its permanent supports and freed from the lower housing. Freeing the YAS from the lower housing requires removing various bars, clamps, seals, packing material and debris that has become packed between the outer perimeter of the YAS and the lower housing. A YAS bound within the lower housing will typically require significant energy to free it from the lower housing. If the YAS releases from the lower housing uncontrollably, it could upset the jacks and drop the yoke. NEVER ALLOW PERSONNEL TO ENTER ANY AREA WHERE THEY COULD BE TRAPPED OR CRUSHED BY THE YOKE SHOULD IT FALL OFF THE JACKS!
- Damaged tapped holes in the yoke preventing proper use of eyebolts for yoke removal.

General maintenance

- Inching drive not secured to the foundation when it is connected to the pulverizer.
- Maintenance door clamp bolts not re-installed after the door has been opened. The clamp bolts are required to transfer hoop stress across the door.

Recommendations

Before beginning any work, always review the B&W PGG Operating and Maintenance instructions and all relevant drawings, inspect and replace damaged or degraded tools before use, and work safely.

B&W PGG Support

Contact your local B&W PGG Sales and Service office for generic O&M instructions, reprints of site specific instructions, copies of field drawings, training, or replacement tools, or to arrange for a B&W PGG Field Service Engineer to assist with your pulverizer maintenance.

delivering
proven results

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