

POWER SURGE

A newsletter for clients of:
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MIDAS LETS YOU CLICK YOUR WAY AROUND YOUR ENTIRE FACILITY

If you have not heard of the MIDAS program (Material Integrity Data Acquisition Software), let us introduce you! MIDAS is a database developed by PSA to help the mills, power plants, chemical plants, etc. to adhere to guidelines for pressure vessel and tank inspections established by the following governing bodies; ASME, Local, State, PSM, BMP, SPCC, API, insurance carriers, etc.



The software allows you to set up individual records for each pressure vessel, boiler, tank, deaerator, dryer cans, etc. Within these records, the following information can be stored:

- Year-by-year inspection reports (NDE, NDE data, visual inspections, photos, video, etc.)
- U-1/R-1/P-3 forms
- CAD drawings of vessels and tanks
- Password protection for individual department use
- Search engine to help determine the vessel inspection schedule.

PSA also offers the on-site services of gathering and loading the above-mentioned information on the database. If information (such as the U-1 or P-3 forms) is missing, we will chase it down through The National Board.

Coming attractions for MIDAS:

- ✓ Data trending (summer 2000)
- ✓ ASME calculation link
- ✓ Test procedure log.

The data trending feature will allow PSA's NDE reports to be installed directly on to MIDAS for easy viewing. Wow! No more hard copy paper weights on your shelves!

PSA will be installing yet another MIDAS system in February at a paper mill in the northeast. If you would like to view MIDAS, please contact Paul Freeman, Northeast District Manager or your assigned PSA Account Manager.

Boiler Upgrade Project Underway for Northeast Stud Mill

PSA engineers completed Phase I of a three-phase project for the upgrade of a wood waste boiler at a northeast stud mill. PSA was contracted to evaluate the performance of a Riley stoker-fired boiler and conceptually design the system modifications necessary for the boiler to meet current emissions standards. In addition, PSA engineers were tasked with ensuring that the boiler could meet increased steam demand resulting from a mill expansion.

Phase I of the project resulted in several critical recommendations for system improvements. Major system modifications include, but are not limited to, installation of a tubular air heater, redesign of the combustion air systems (undergrate and overfire), controls upgrade, and miscellaneous ancillary system improvements. Predicted boiler performance following redesign and modification of the boiler support systems indicates a potential 20% increase in operating efficiency while achieving compliance with current emissions standards.

**"...20%
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PSA anticipates beginning Phase II of the project during the first quarter of this year.



Superheater tube crack

UNUSUAL INSPECTION FIND

During this past outage season, one of the PSA inspectors discovered random cracking in various superheater tubes. The cracks were located on the inside of the "tight bend" of the superheater tubes toward the furnace.

The cracking appeared to be confined to the bent tubes, those that are formed using the "interference process." In

this process, the manufacturer heats a short section of tube at the location where it will be bent. The ends of the tube with the red hot section are then pushed inward. This causes the heated section of the tube to shorten, which, in turn, causes the tube wall to thicken. While the tube is hot, it is bent around a jig. This process is utilized because it helps maintain tube thickness on the outside tube bend as it is formed. This process also results in the thickening of the tube on the inside of the bend, which may be part of the reason that these cracks are developing. To date, the root cause of the cracking mechanism has not been determined.



Close-up of crack

PSA inspectors have found cracking of this type in several other boilers of similar design during routine visual inspections. Repairs have been a combination of bent tube replacement, or grinding, followed by welding.

Be aware that at one location, a new bent tube section was inspected by the PSA inspector and found to have cracking before it was installed in the boiler.



NEW BLRBAC SUBCOMMITTEE CHAIRMAN

Bob Zawistowski, our Director of Engineering Services, will be the new Chairman of the Personal Safety Subcommittee beginning with the April 2000 BLRBAC meeting. Dave Rolfe, formerly of SAPPI Fine Papers, announced his retirement during the October 1999 BLRBAC meeting.

The Personal Safety Subcommittee was reactivated during the April 1999 BLRBAC meeting to address several new issues before BLRBAC. First is the issue regarding furnace structural integrity during explosions. The committee will be investigating historical explosion information, as well as the latest design information from the manufacturers. One of the primary objectives of the committee is to develop recommendations for principles of design that owners should consider in the purchase and rebuild of furnaces.

The second major topic being addressed by the committee is the inspection intervals for recovery furnaces. Typically, a period of one year is allowed between inspections with a reasonable grace period to accommodate outage schedules. In general, the paper industry has expressed an interest in increasing this interval.

A number of other potentially valuable topics were discussed and will be addressed by the committee at a later date. These include dissolving tank and doghouse design, spout area safety, and training concerns in an era of downsizing and early retirement incentives.

The committee is still in the organizational stage. If you are interested in participating in this committee, please contact Bob in our Somers, CT office at (860) 763-3241.

PSA provides services for industries where steam generation is integral to meeting process and/or electrical generation production objectives. These services include the following:

- Operations/Engineering
- Recovery Boiler System Auditing
- Water System Auditing
- Comprehensive Boiler Inspections
- Boiler Performance Optimization
- Training Programs & Resources
- Instructional Seminars
- Pressure Vessel/Tank Condition Assessment
- Custom Information Management Services