ADVANCED DIGITAL SERVICES

Cross-Directional Weight Control Check-up

Record, monitor and track health and normal operation of cross-directional weight control

Typical issues

- Sudden profile control performance deteriorate
- No machine operating point records exist when cross-directional weight control problem occurs
- Not knowing what is normal performance for cross-directional weight control
- Machine operating point shifts
- Profile response mapping changed
- Profile response shape and magnitude changed
- Profile response time changed
- Actuator setpoint over-controlling

Preventive maintenance solution

ABB Cross-Directional (CD) Weight Control Check-up is a preventive maintenance schedule that follows a three-step execution (test, record and track) to assess normalcy of the CD weight control. This three-step execution is performed monthly to establish a history or chart of the CD weight control. Having a history allows for quick access to normal process and control settings, and normal profile response behavior for when a profile problem is encountered.

The history can be used as a standard to compare the CD weight control performance from month to month, following machine maintenance days, or following machine upgrade projects. Typically, mills that have maintained a detailed and updated CD weight control history have benefited from faster problem resolution, avoidance of emergency service site visits, and discovery of potential profile control improvements. Each dollar spent is returned 10 times over in added ROI to the plant.

Test

The test step includes performing a multiple zone CD actuator bump test and collecting OPC data for the bump test sequence, and brief steady-state operation before and after the bump test sequence. The test is performed during steady-state and normal operation to capture and establish a history of normalcy. Data collection includes the following:

- Product grade
- Weight and moisture profiles
- Actuator setpoints
- Available process variables (speed, stock flow, total head, slice opening, chest and box consistencies, dilution flow ratio)
- Key control tuning variables (mapping, response model, temporal tuning, constraints)

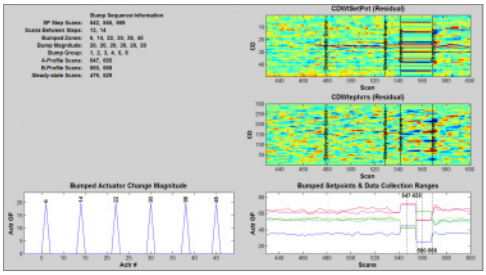
Record

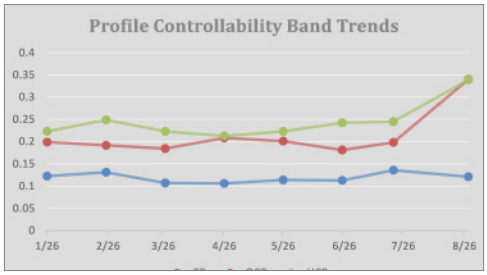
The record step includes analyzing the bump test data and updating the CD weight control health history so the mill and ABB can have the profile performance and machine operating point information when it is needed the most. The recorded information includes the following:

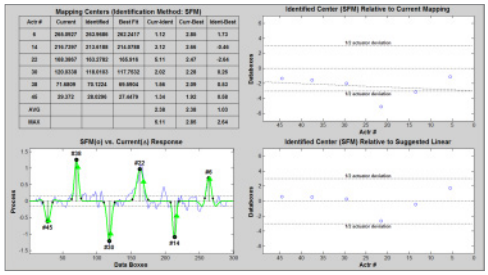
- Product grade
- Actuator alignment statistics
- Process response statistics
- Profile variability band distribution
- Actuator setpoint variability band distribution
- Median operating point for available process variables
- Key control tuning values

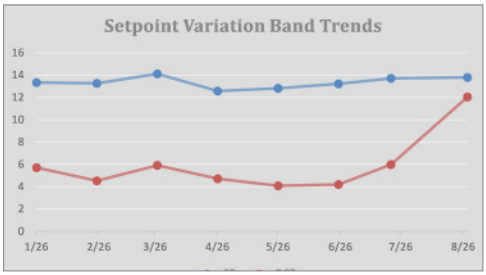
Track

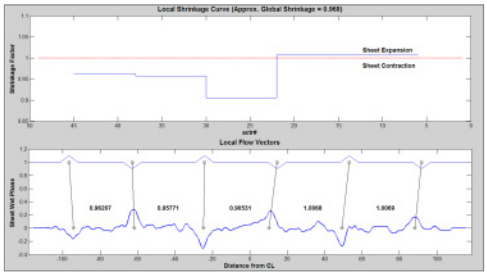
The track step includes generating statistics on recorded bump test results, process operating point information and control settings information. Trend plots of the recorded information is updated and the

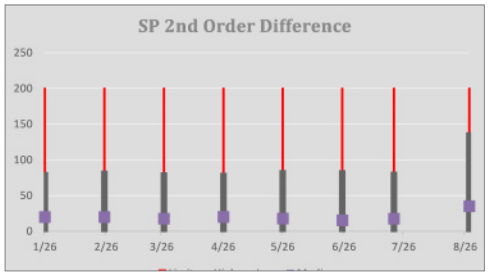


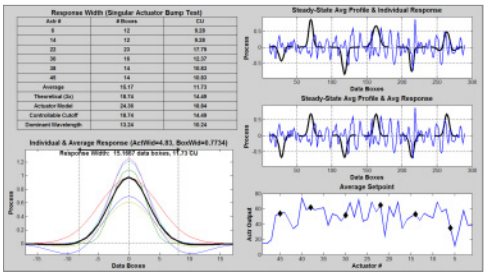


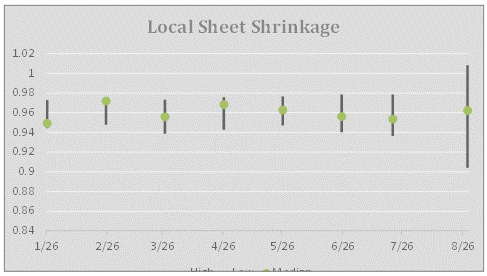


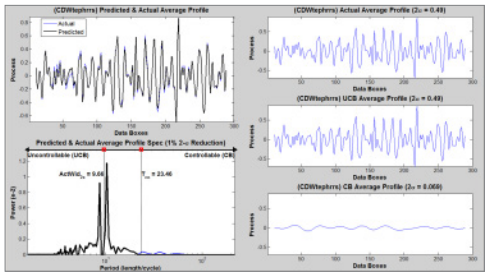










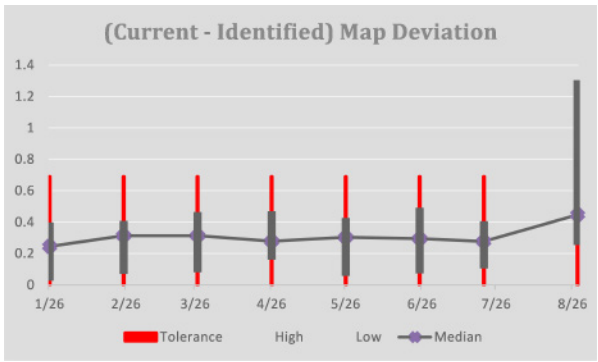


CD weight control history is shared with the mill following every scheduled preventive maintenance execution. If the trended history shows a clear opportunity to improve the CD weight control performance, the appropriate improvement recommendation will be provided with the updated history.

Implement

Once improvement recommendations have been defined, steps to improve performance, while creating a foundation for continuous improvement, can begin. Services to implement improvement recommendations are in addition to the CD Weight Control Check-up service and priced separately.

Approved improvement recommendations can be implemented all at one time, or scheduled to be completed incrementally over time; beginning with improvements that provide the greatest financial return. ABB is available to implement the improvements, work with site engineers, or work along with site personnel to achieve the desired performance level.



Why ABB is best

ABB is the world leader in pulp and paper applications. In depth knowledge and experience in this area allows comprehensive evaluation, diagnosis, remedial recommendations and implementation, and the ability to manage and sustain process performance improvement.

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