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Centrifuge control ensures operational safety: state of the art.

Occupational and operational safety is in the industry a key issue worldwide, including in sugar refineries. Management is responsible for the safety of employees. While occupational safety is only regulated locally, the manufacturers of equipment are also required to implement operational safety. Batch centrifugals in sugar factories turn large masses at high rotation. The energy stored in the operating phases of acceleration, spinning and deceleration has the potential to end catastrophically in the event of an accident. The manufacturers of batch centrifugals have always been aware of the dangers associated with this energy and have developed strategies to rule out any risk to life and limb. The hazard analysis, which is part of a machine safety assessment, includes the assessment of risks according to the criteria of severity of injury, frequency and duration of exposure and the possibility of hazard prevention. Based on the results, the equipment is designed according to the principles of the assigned safety category. This paper describes the current status of measures on batch centrifugals that are suitable for preventing uncontrollable and potentially dangerous operating and machine conditions. Taking into account the interaction of the rotating centrifugal basket with the drive package and the control unit, the use of fail-safe components and the implementation of safety-enhancing operating sequences are presented. During operation, regular monitoring is necessary to ensure operational safety throughout the entire service life.