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I PURPOSE

The purpose of this procedure is to provide for a system and instructions, and to assign responsibilities for preventive maintenance program for key process equipment.

II APPLICATION

This procedure applies to process equipment and machines, and in particular equipment responsible for processing Special Characteristics.

This procedure concerns directly Production Engineering and Production.

III PROCEDURE

1. Key Process Equipment

- 1.1 The Production Engineer is responsible for identifying key process equipment and machines to be included in a formal, planned preventive maintenance system. As a minimum, equipment to be included are machines responsible for processing Special Characteristics, and those machines that are crucial for maintaining production schedule.

2. Preventive Maintenance Plan and Schedule

- 2.1 For each identified key process equipment, the Production Engineer prepares a preventive maintenance plan and schedule. The plan defines the scope and frequency of routine maintenance activities and inspections. The plan is established based on equipment manufacturer's recommendations and experience with equipment reliability.
- 2.2 All key equipment and machines included in the maintenance program are completely inspected and serviced at least once a year. Preventive maintenance activities may include, as appropriate: dismantling of machines for inspection and testing of parts; fluid

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analysis; infrared monitoring of circuits; vibration analysis; replacement of fluids, filters, seals, gaskets, drive belts, and so forth.

- 2.3 Every inspection, maintenance, and repair activity is recorded in a maintenance log. At a minimum, an entry in the log includes: classification of the activity (inspection, maintenance, or repair); description of what was done; listing of replaced parts and/or supplies; and, when relevant, test results. All adjustment, maintenance, and repair activities are also recorded on SPC control charts.

3. Equipment Performance Monitoring

- 3.1 In order to identify equipment problems at an early stage and prevent breakdowns, process equipment operators are instructed to monitor tool wear, process performance, vibrations, etc., and report any abnormal functioning to the Production Engineer.
- 3.2 To evaluate effectiveness of the preventive maintenance program, the Production Engineer monitors equipment downtime and reviews the correlation between SPC data and maintenance activities.

IV ASSOCIATED DOCUMENTS

- Statistical Process Control — Oper. Proc. OOP-09-03