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Sure, here's a detailed startup sequence for the press section of a Valmet paper

Create a detailed startup sequence for the press section of a Valmet paper machine

 Check the hydraulic oil level and the cleanliness of the press section. Ensure that the press rolls are in good condition and properly aligned.

1. Initial Preparation:

including typical parameter values.

- Make sure the felts and wires are in good condition and properly threaded.
- 2. Pre-Wetting Phase:
- Pre-wet the press section with water to prevent any paper breaks.
- Start the machine at a low speed (e.g. 200 m/min).
  - Set the press roll temperatures to a low value (e.g. 40°C).

Set the nip pressure to a low value (e.g. 10 kN/m).

machine, along with some typical parameter values:

- 3. Felt Conditioning Phase:
- Condition the felts with a conditioning agent (e.g. soap) to improve their water

4. First Pressing Phase:

kN/m).

retention capacity. Increase the press roll temperatures (e.g. 70°C) to improve dewatering.

Increase the machine speed (e.g. 500 m/min) and the nip pressure (e.g. 50

- Increase the machine speed (e.g. 800 m/min) and the nip pressure (e.g. 100
- kN/m). Set the press roll temperatures to the desired value for the paper grade being

Monitor the paper web moisture content and adjust the nip pressure, felt

Adjust the felt tension and guiding to ensure proper paper guiding.

tension, and guiding as necessary.

kN/m).

5. Second Pressing Phase:

6. Final Pressing Phase:

produced.

 Check for any paper defects, such as wrinkles, tears, or breaks, and take corrective action as necessary.

Increase the machine speed (e.g. 1200 m/min) and the nip pressure (e.g. 150

Continue to monitor the paper web moisture content and adjust the nip

pressure, felt tension, and guiding as necessary.

kN/m). Continue to monitor the paper web moisture content and adjust the nip pressure, felt tension, and guiding as necessary.

Check for any remaining paper defects and take corrective action as necessary.

• Increase the machine speed (e.g. 1500 m/min) and the nip pressure (e.g. 200

Gradually decrease the machine speed and the nip pressure.

• Run the machine at a low speed (e.g. 200 m/min) and rinse the press section

with water to remove any remaining paper debris.

Shut down the press section and perform any necessary maintenance.

parameter values are:

7. Runout Phase:

depending on the specific paper grade being produced, as well as other factors such as machine speed, felt type, and press roll design. However, some common

Typical parameter values for the press section of a Valmet paper machine can vary

 Nip pressure: 10-200 kN/m Press roll temperatures: 40-100°C • Felt tension: 300-500 N/m

 Machine speed: 200-1500 m/min Moisture content: 40-60%

Write a self-contained IEC 61131-3 structured text program to control this startup sequence.

61131-3.

go

• Felt guiding: 0.2-0.5 mm

- As an Al language model, I don't have the capability to write code in a specific

of a Valmet paper machine press section:

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PROGRAM Press\_Startup VAR machine\_speed : REAL := 0.0; nip\_pressure : REAL := 0.0; roll\_temp : REAL := 0.0;

environment. However, I can provide you with a general structured text program

that could be used as a reference for implementing the startup sequence in IEC

Here's an example of a structured text program that controls the startup sequence

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```
felt_tension : REAL := 0.0;
    felt_guiding : REAL := 0.0;
   moisture_content : REAL := 0.0;
END_VAR
// Initial Preparation
// Check the hydraulic oil level and the cleanliness of the press section.
// Pre-Wetting Phase
machine_speed := 200.0;
nip_pressure := 10.0;
roll_temp := 40.0;
WHILE machine_speed < 500.0 DO
    // Pre-wet the press section with water
    // Start the machine at a low speed
    // Set the nip pressure to a low value
    // Set the press roll temperatures to a low value
   machine_speed := machine_speed + 50.0;
    nip_pressure := nip_pressure + 10.0;
    roll_temp := roll_temp + 2.0;
END_WHILE
// Felt Conditioning Phase
felt_tension := 300.0;
felt_guiding := 0.2;
roll_temp := 70.0;
WHILE machine_speed < 800.0 DO
    // Increase the machine speed
    // Condition the felts with a conditioning agent
    // Increase the press roll temperatures
    // Adjust the felt tension and guiding
   machine_speed := machine_speed + 100.0;
    felt_tension := felt_tension + 50.0;
    felt_guiding := felt_guiding + 0.1;
    roll_temp := roll_temp + 10.0;
END_WHILE
// First Pressing Phase
nip_pressure := 100.0;
WHILE machine_speed < 1200.0 DO
    // Increase the machine speed
    // Set the press roll temperatures to the desired value
    // Adjust the felt tension and guiding
    // Monitor the paper web moisture content
   machine_speed := machine_speed + 200.0;
    felt_tension := felt_tension + 50.0;
    felt_guiding := felt_guiding + 0.1;
   moisture_content := moisture_content + 5.0;
END_WHILE
// Second Pressing Phase
nip_pressure := 150.0;
WHILE machine_speed < 1500.0 DO
    // Increase the machine speed
    // Adjust the felt tension and guiding
    // Monitor the paper web moisture content
   machine_speed := machine_speed + 300.0;
    felt_tension := felt_tension + 50.0;
    felt_guiding := felt_guiding + 0.1;
   moisture_content := moisture_content + 5.0;
END_WHILE
// Final Pressing Phase
nip_pressure := 200.0;
WHILE moisture_content > 60.0 DO
    // Increase the machine speed
    // Adjust the felt tension and guiding
    // Monitor the paper web moisture content
   machine_speed := machine_speed + 300.0;
    felt_tension := felt_tension + 50.0;
    felt_guiding := felt_guiding + 0.1;
    moisture_content := moisture_content - 5.0;
END_WHILE
```



// Runout Phase WHILE machine\_speed > 200.0 DO // Gradually decrease the machine speed and the nip pressure

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continue

// Run

END\_WHILE // Shut down the press section and perform any necessary maintenance. END\_PROGRAM

// Run the machine at a low speed and rinse the press section with water

machine\_speed := machine\_speed - 100.0;

nip\_pressure := nip\_pressure - 50.0;

This program uses variables to store the values of key parameters such as n Note that this is just an example program, and the exact implementation may

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