Short Report on My Engineering Experience in a Vegetable Oil Production Environment

In my role as a Maintenance Technician and Plant Engineer in a vegetable oil production facility, I worked extensively with various mechanical, electrical, and process equipment to ensure smooth, efficient, and safe plant operations. My responsibilities involved equipment monitoring, preventive and corrective maintenance, troubleshooting, and supporting continuous production activities across different stages of the oil extraction and refining process.

Key Equipment I Worked With and Their Applications

1. Conveyors

My Application:

I maintained and repaired belt and chain conveyors used for transporting seeds, expellers, and finished products.

I ensured alignment, tensioning, lubrication, and safety guards were in proper condition to prevent downtime.

2. Elevators

My Application:

I serviced bucket elevators responsible for lifting raw kernel to processing units.

I troubleshot issues such as belt slippage, bucket damage, and motor overload.

3. Desolventizing Toaster (DT)

My Application:

I monitored steam distribution, tray conditions, and temperature control to ensure safe removal of solvents from kernel cake.

I supported routine maintenance of the internal mechanical components.

4. Solvent Extractor

My Application:

I assisted in maintaining extractor chains, screens, and pumps involved in the solvent extraction process.

I ensured minimal solvent loss by checking seals, bearings, and piping integrity.

5. Pumps (Centrifugal & Gear Pumps)

My Application:

I maintained pumps used for transferring crude oil, hot water, solvents, and other fluids.

I performed seal replacement, alignment, impeller cleaning, and bearing lubrication.

6. Boiler

My Application:

I supported boiler operation by monitoring feedwater levels, steam pressure, and burner performance.

I performed basic maintenance, including valve checks, blowdowns, and leak inspections.

7. Crushing Impeller / Expeller

My Application:

I maintained expeller shafts, worm assemblies, presses, and bearings used for mechanical extraction.

I troubleshot vibration, overheating, and wear issues that affect oil yield.

8. Silo

My Application:

I monitored silo aeration systems and mechanical discharge mechanisms to prevent blockages.

I ensured proper functioning of sensors and material flow systems.

9. Cooling Tower

My Application:

I worked on cooling tower pumps, fans, and water distribution systems used for cooling plant equipment.

I performed maintenance checks on nozzles, packing materials, and motors.

10. Electric Motors

My Application:

I installed, serviced, and troubleshot electric motors powering various machines across the plant.

I conducted insulation tests, alignment, and vibration checks to extend motor life.

11. Heat Exchangers

My Application:

I assisted in cleaning and maintaining heat exchangers used for heating, cooling, and temperature control in the oil processing line.

I inspected plates and tubes for fouling and leaks to ensure efficient heat transfer.

Summary of My Engineering Role

Throughout my time as a Maintenance Technician and Plant Engineer, I contributed significantly to plant reliability and operational efficiency. My work involved:

Production and Maintenance of Plants and Machinery.

Conducting preventive and corrective maintenance.

Diagnosing mechanical and electrical faults.

Ensuring safety compliance across all equipment.

Supporting production continuity during critical processing stages.

Collaborating with production teams to optimize performance.

This experience strengthened my technical knowledge, troubleshooting ability, and understanding of large-scale industrial processes within a vegetable oil production environment.