Nitrogen Plant Instability Check (5-Minute)

□ SECTION 1 — START HERE

If your plant shows:

- Purity fluctuation
- Pressure instability
- Frequent operator adjustments
- Unstable startup behavior

☞ Use this quick check to identify where the problem actually starts

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□ SECTION 2 — DIAGNOSTIC QUESTIONS

◆ Q1 — Purity Behavior

Does purity drop **after load increase**?

☐ Yes
☐ No

☞ If YES:
Likely cause is **column imbalance or pressure shift**, not analyzer

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◆ Q2 — Pressure Sequence

Does pressure fluctuate **before purity changes**?

☐ Yes
☐ No

☞ If YES:
Problem originates **upstream (compressor / control)**

◆ Q3 — Operator Actions

Do operators frequently adjust valves or setpoints?

☐ Yes
☐ No

☞ If YES:
Plant is **not stable** (control or startup issue)

◆ Q4 — Startup History

Was cooldown or startup rushed to achieve faster production?

☐ Yes
☐ No

☞ If YES:
Root cause may originate from **startup sequence**

◆ Q5 — Fluctuation Pattern

Is the instability **cyclic (repeating pattern)**?

☐ Yes
☐ No

☞ If YES:
Likely **control loop oscillation**, not mechanical issue

□ SECTION 3 — RESULT

If you answered:

✅ 0–1 YES
→ Normal variation, monitor further

✅ 2–3 YES
→ Problem is **likely misdiagnosed**

✅ 4–5 YES
→ You are treating **symptoms, not root cause**

□ SECTION 4 — KEY INSIGHT

Most plant problems are not random.

They follow a **sequence**:
👉 Change → Imbalance → Instability → Symptom

If you only see the symptom,
you will never solve the problem.

SECTION 5 — NEXT STEP

Choose how you want to proceed:

☞ Solve yourself
Explore Engineering Toolkits

☞ Understand deeply
Join Cryogenic ASU Training

☞ Need expert help
Book Consulting Support
