



New Hire Journey: CMP Technician 2

Samsung Austin Semiconductor

Success and Failure Scenario in a Year | Fault Tree Analysis (FTA) | Event Tree Analysis (ETA) | Action Plan



LEARN EXECUTE IMPROVE
Safe Today • Quality Tomorrow • A Stronger You



ONE YEAR
MANY POSSIBILITIES
YOUR ACTIONS
MAKE THE DIFFERENCE

Role Overview



CMP Technician 2 Samsung Austin Semiconductor

Operate, monitor, maintain, and support CMP equipment to achieve safe, stable, high-quality semiconductor manufacturing.



Equipment Operation



Preventive Maintenance



Process Control



Troubleshooting Support



Chemical & Slurry Systems



Wafer Handling



Safety & Contamination Control



Documentation & Handoff



Success Definition

A successful first year means:

- Safe and procedure-compliant
- Qualified on assigned equipment
- Technically progressing
- Reliable across shifts
- Productive without sacrificing quality
- Able to troubleshoot within authorization
- Trusted by peers, supervisors, and engineering
- Retained and positioned for growth



Failure Definition

Failure can mean:

- Safety failure (violation, exposure, injury)
- Quality failure (contamination, wafer damage)
- Reliability failure (inconsistent performance)
- Performance failure (not meeting expectations)
- Technical competency failure (cannot qualify)
- Adaptation failure (cannot sustain environment)
- Retention failure (resigns, transfer, or termination)



Operating Environment

- Highly controlled semiconductor manufacturing
- Cleanroom environment
- Chemical and mechanical systems
- 24/7 operations (rotating shifts)
- Strict safety, quality, and contamination requirements
- Cross-functional teams (technicians, engineers, maintenance)
- High expectations for execution, documentation, and communication



Fault Tree Analysis (FTA)

Why could the new CMP Technician 2 fail in the first year?



Top Event:
New CMP Technician 2 fails to achieve a successful first year



Safety Failure

- Inadequate hazard understanding
- PPE violation
- LOTO / energy control error
- Unsafe shortcuts
- Rushing during alarms
- Failure to report near misses
- Fatigue / reduced attention
- Overconfidence



Quality Failure

- Poor process awareness
- Wafer/material handling error
- Contamination control failure
- Incorrect slurry/consumable handling
- Missed equipment drift
- Incorrect alarm response
- Incomplete logs
- Poor shift handoff
- Unauthorized adjustments



Technical Competency Failure

- Weak manufacturing fundamentals
- Poor CMP understanding
- Weak mechanical/electrical/pneumatic skills
- Cannot interpret alarms
- Does not learn subsystems
- Does not ask/retain
- Limited hands-on practice
- Cannot identify root cause
- Poor troubleshooting docs
- Does not seek feedback



Performance Failure

- Tardiness / absenteeism
- Poor shift handoff
- Slow response to tasks
- Repeated procedural errors
- Cannot prioritize tasks
- Poor housekeeping
- Does not close the loop
- Poor communication
- Cannot sustain rotating shifts



Adaptation / Retention Failure

- Cannot adapt to shifts
- Poor sleep / recovery
- Difficulty accepting coaching
- Poor teamwork
- Poor communication
- Blames others
- Expectation mismatch
- No visible development path
- Chronic stress
- Fails to ask for help
- Does not fit work discipline



Event Tree Analysis (ETA)

What happens after the new hire starts?



Start New employee begins work as CMP Technician 2

++ YES

IF NO →

Barrier / Decision Point

- | Barrier / Decision Point | Continue | IF NO → |
|---|----------|---|
| B1 Effective onboarding? | Continue | Elevated failure risk |
| B2 Safe and procedure-compliant? | Continue | Safety intervention / possible failure |
| B3 Learns fundamentals? | Continue | Qualification delay / dependency |
| B4 Achieves qualification? | Continue | Performance risk / extended development |
| B5 Reliable shift execution? | Continue | Coaching / performance action |
| B6 Troubleshoots & escalates correctly? | Continue | Repeat incidents / trust erosion |
| B7 Integrates with team? | Continue | Reduced support / disengagement |
| B8 Sustains performance? | Continue | Burnout / attendance / performance risk |
| B9 Retained and progressing? | Success | First-year outcome failure |



Successful First Year

Safe + Qualified + Reliable + Trusted + Retained



Failure Outcome

Safety, Quality, Performance, Adaptation, or Retention Failure



First-Year Timeline

Key focus areas and common risks by phase

Month 0-1 Entry & Orientation

- Learn safety & expectations
- Cleanroom discipline
- Ask questions
- Arrive prepared
- Primary risk:** Poor foundation

Month 2-3 Initial Learning

- Learn equipment & process
- Recognize alarms
- Perform with supervision
- Retain coaching
- Primary risk:** Learning stagnation

Month 4-6 Qualification

- Meet qualification milestones
- Execute tasks independently
- Escalate abnormalities
- Complete handoffs
- Primary risk:** Competency gap

Month 7-9 Reliability & Troubleshooting

- Recognize equipment patterns
- Respond to abnormalities
- Contribute to problem-solving
- Be dependable
- Primary risk:** Reliability and trust gap

Month 10-12 Consolidation & Evaluation

- Sustain performance
- Maintain good attendance
- Demonstrate growth
- Trusted by team
- Primary risk:** Failure to convert training to sustained performance



Success Best-Known Method (Repeatable Approach)



Be Safe



Learn Continuously



Execute Consistently



Communicate Clearly



Ask & Escalate Early



Improve Every Day

Build Skills
Create Opportunities
Grow Your Tomorrow



Leading vs. Lagging Indicators

Leading Indicators (Early Warning)

- Reports hazards
- Takes notes & asks questions
- Applies coaching
- Completes tasks
- Clear handoffs
- Maintains attendance
- Seeks knowledge
- Positive team engagement

Lagging Indicators (After the Problem)

- Safety violation
- Failed qualification
- Repeated errors
- Poor performance evaluation
- Excessive absenteeism
- Loss of team trust
- Formal corrective action
- Resignation or termination



Key Takeaways

- Safety is non-negotiable.
- Technical ability cannot compensate for unsafe behavior.
- A slower start can still lead to success if you're coachable and persistent.
- Reliability is a technical skill.
- Trust is earned through repeated evidence.
- Manage leading indicators — don't wait for severe problems.
- Turn every mistake into a learning opportunity.
- Your actions determine your first-year outcome.

Same Process
A Better You
Brighter Tomorrow



Safe People • Stable Equipment • Quality Wafers • A Stronger Tomorrow



hub.gravelcloud.com Rigel G Arcayan, 2026.