5-Whys

Structured root cause analysis for moderate-risk or repeat nonconformances

Reference	Detail
Form	F1020-04 5-Whys Worksheet
Use when	Severity = Major (First Occurrence), or Severity = Minor with Occurrence = Repeat. RPN 50–200.
Time target	Complete within 30 working days of NCR being raised
RCA requirement	5-Whys analysis plus fishbone diagram and problem description sketch
NCR Log column L	Select "5-Whys" in the Root Cause Method column

Steps to Complete the 5-Whys Analysis

1	Record the NCR reference, tracking number, and response due date. Set initial status to Open.
2	Write a specific problem statement. Include: what failed, how it failed, where it was found, and when. Attach a sketch if the failure mode has a spatial or dimensional component.
3	Ask "Why did this problem occur?" Write the answer as Why 1. This must be a factual observation, not a conclusion.
4	Ask "Why did [Why 1] occur?" Write the answer as Why 2. Continue through Why 3, Why 4, Why 5.
5	Stop when you reach a root cause that is actionable and systemic — one where fixing it will prevent the failure from recurring, not just this instance.
6	Identify and verify the root cause. Is it consistent with all available evidence? Would addressing it have prevented this NCR?
7	Define corrective actions to address the root cause. Enter in F0870-02 col M. Assign owner (col N) and target date (col P).
8	At completion, record evidence of effectiveness in F0870-02 col U and close the NCR.

The most common 5-Whys mistakes:

- Stopping at Why 2 or 3 — "the operator did not follow the procedure" is a symptom, not a root cause. Ask why the procedure was not followed.
- Multiple branches at the same Why level — if there are two different Why 2 answers, you need two separate 5-Whys chains.
- Confusing the escape cause with the occurrence cause — the 5-Whys should answer both: why did the failure happen, AND why did the detection controls fail to catch it?
- Root cause that is not actionable — "we were busy" is not actionable. "The setup verification step was absent from the work instruction" is actionable.

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Fishbone/Ishikawa

Cause and effect brainstorming for all RCA methods

Reference	Detail
Form	F1020-07 Fishbone Ishikawa
Use with	A3, 5-Whys, and 8D (D4). The Fishbone is a brainstorming tool — it feeds root cause identification; it does not replace it.
Time to complete	30–60 minutes in a team session. Do not complete alone.
Team size	Minimum 2 people. Maximum 6 for a single session.
Output	A shortlist of the 1–3 most likely causes to investigate with the 5-Whys or IS/IS NOT method

The 6M Categories

Category	What to brainstorm
Man (People)	Operator skill, training, fatigue, shift patterns, supervision, communication gaps, task complexity
Machine	Equipment condition, calibration status, maintenance history, tooling wear, setup accuracy, age
Method	Work instruction quality, process sequence, inspection method, work instruction compliance, procedure gaps
Material	Raw material specification, supplier variation, batch-to-batch consistency, storage conditions, traceability
Measurement	Gauge capability, calibration, measurement system variation, operator measurement technique, gauge selection
Environment	Temperature, humidity, lighting, vibration, cleanliness, workspace organisation, time pressure

Steps to Run a Fishbone Session

1	Write the problem statement (the "effect") at the head of the fishbone. This must be the same statement as in the NCR description — do not rephrase it.
2	Draw the six main bones (6M categories) on the diagram.
3	For each category, ask the team: "What in this category could have caused the problem?" Record every suggestion — do not filter at this stage.
4	For each cause identified, ask "why could this have caused the problem?" Add secondary branches.
5	Review all causes with the team. Circle the top 3 most likely contributors based on evidence, not opinion.
6	The circled causes become the input to the 5-Whys analysis. One 5-Whys chain per circled cause.

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