Link a process risk to an executable control plan

Translate a defined process risk into a station-ready control record with a method, sampling rationale, actual evidence and authorized reaction.

A tolerance by itself is not a control plan

Fictional case: OP20 produces a slot with an approved example width criterion 9.90-10.10 mm. A draft row says "check width" and gives a five-consecutive-units-every 50-produced sampling example. Engineer Farah must make the row usable by the station team while keeping that sampling pattern explicitly illustrative and subject to risk/containment approval.

Your role and the reference condition

Process engineer with quality, production and measurement owners
Normal: The controlled characteristic, requirement revision, suitable method, sampling basis, record, owner and abnormality/restart path agree across the process risk review and work instruction.
Gap: The operator cannot identify the gauge, record actual readings or determine who holds affected stock when a result is abnormal.

Work within these conditions

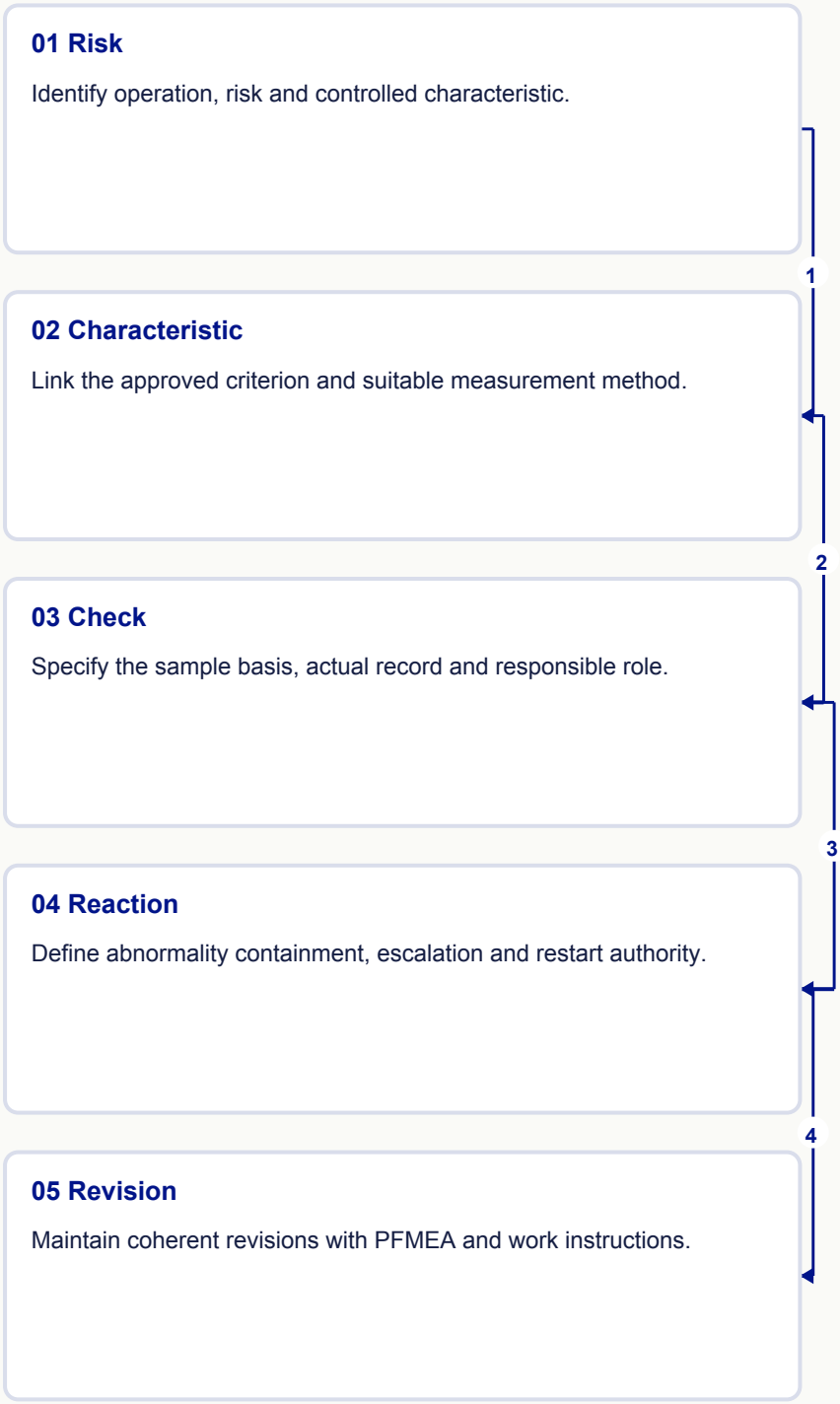
1. The fictional sampling interval is not a universal safe plan.

2. The teaching record is an original example, not a proprietary standard form or complete customer requirement set.

Fictional teaching case. Supplied observations support the exercise; proposed actions are not verified customer results.

See how the method works

A control plan connects a process risk to an executable check and response. Link the operation and characteristic to an approved criterion, suitable measuring method, sample basis and retained record. Identify who performs the check and who handles an abnormal result. Sampling should support the intended detection and containment strategy; a convenient interval alone is not a rationale. Maintain links to the process risk analysis, work instruction and revision history so changes remain coherent. The example row is an original teaching device, not an official customer form. A completed row does not establish compliance or authorize production without the applicable review and approval.



Read every connection

1. Step 1 > 2
Continue with the next action

2. Step 2 > 3
Continue with the next action

3. Step 3 > 4
Continue with the next action

4. Step 4 > 5
Continue with the next action

Method exhibit: Risk, Characteristic, Check, Reaction, Revision.

Follow the evidence and decisions

Inspect the supplied case inputs

Draft element	Supplied status
Operation / characteristic	OP20 / slot width
Example specification	9.90-10.10 mm
Sampling proposal	Five consecutive units every 50 produced; requires approval
Missing details	Method, record, owner, reaction and restart evidence

01 / Link the risk and characteristic

Farah identifies the process failure concern and the slot-width characteristic it affects. She confirms the applicable drawing and instruction revision before filling in a control row.

Why: A disconnected characteristic list cannot show why the control exists or what a revision affects. Requirement identity must survive from risk review to station use.

Evidence / check: OP20 and slot width refer to the same controlled product revision.

02 / Define a suitable observation method

The measurement owner specifies the authorized gauge and method in the actual station instruction, verifies fitness for the width decision, and defines readiness checks. The teaching example does not invent a gauge approval.

Why: A number is useful only if the method can support the decision. A named instrument without a suitable method or measurement evidence is incomplete.

Evidence / check: The row points to a controlled measurement instruction and its owner.

03 / Evaluate sampling and exposure

The team examines what could be produced between checks and whether the proposed five-every 50 pattern can support detection and containment for this risk. It records the rationale and required approval rather than treating the example as a rule.

Why: Sampling interval affects potential exposure. The convenient count of checks is not a substitute for risk and response analysis.

Evidence / check: The sampling field distinguishes proposal, approval status and applicable process conditions.

04 / Make the record and reaction executable

The row requires actual values, product/lot identity, time and operator. An abnormal result follows the approved stop/hold/escalate instruction; restart and product disposition have separate named authorities.

Why: "Check OK" hides the observed value and makes exposure reconstruction harder. Restarting the process is not the same decision as releasing held product.

Evidence / check: The station can identify what to record and whom to contact without inventing the response.

05 / Verify the connected revisions

Farah walks the row at OP20 with an operator and tests a fictional abnormal-reading scenario. She checks that PFMEA, control plan and instruction references remain aligned after any change.

Why: A completed document can still be unusable at the work. A walkthrough exposes missing records, permissions and feedback before the plan is relied on.

Evidence / check: The review records the observed drill, gaps and required controlled changes.

Completed risk-to-station control record

Control-plan field	Completed teaching entry	Remaining authority
Characteristic	OP20 slot width;9.90-10.10 mm example	Current drawing/requirement
Method	Controlled width-measurement instruction	Measurement owner approves suitability
Sample	Proposed 5 consecutive every 50	Risk/containment review required
Record	Actual readings, identity, time, operator	Controlled station record
Reaction	Stop/hold/escalate; verify restart and disposition	Named quality/process roles

The characteristic changes revision

The product owner changes the slot requirement, but the station still displays the old control-plan copy.

Decision

Stop relying on the stale copy, identify affected work and route the change through controlled review of measurement, sampling, reaction and training.

Reasoning

Replacing a number alone may leave the method or response unsuitable. The linked documents and work conditions must change coherently.

What would change the decision?

The change record reconciles requirement, control plan and station instruction revisions.

Practise with a changed case

Repair a different incomplete row

New fictional OP30 checks hole diameter against an approved example range 5.00-5.10 mm. The row only says "inspect periodically; operator signs".

Field	Current entry
Characteristic	Hole diameter 5.00-5.10 mm
Frequency	Periodically
Record	Signature only
Reaction	Blank

Your task

1. Identify the missing operational fields without inventing a universal sampling rate.
2. Draft an actual-value record and abnormality/restart responsibilities.
3. Explain which linked sources must be reviewed if the requirement changes.

Use the next page to record your reasoning before reading the answer.

Your practice worksheet

Repair a different incomplete row

Requirement revision

Method authority

Sampling rationale

Actual observation record

Containment/restart/disposition owners

Complete your reasoning before turning to the answer. Use the separate learner workbook for group practice.

Check your reasoning and transfer it

1. The row needs a suitable controlled method, approved sampling basis, actual reading/identity/time record, defined abnormality response and named restart/disposition authority. "Periodically" is not an executable interval.

2. A correct answer requests risk and detection/containment information before choosing a rate. Link the revised characteristic to PFMEA, control plan, measurement method and station instruction.

Suggested completed record

Gap	Required resolution	Do not invent
Sampling	Risk-based approved basis	A universal interval
Record	Actual value and identity	A green tick as measurement
Reaction	Controlled hold/escalation and verification	Automatic release after adjustment

Plausible wrong turns

1. A tolerance is not a complete control plan.

2. A proposed sampling interval is not an approved requirement.

Evidence of a sound answer

1. Make the row executable.

2. Preserve revision connections.

3. Separate process restart from product disposition.

Take the learning back to work

Commitment	Agreed follow-through
Owner	Process engineering with quality and station owners
Record	Linked risk/control/instruction revision and completed station records
Review	At launch, controlled changes and periodic effectiveness review
Verification evidence	Operators execute checks and responses with traceable values and verified authority
If unresolved	Repair the control or collection method and update linked revisions when a drill exposes a gap.

Help someone else apply the method

Prepare

1. Incomplete OP30 row
2. Blank station record
3. Role cards

Minutes	Activity and coaching prompt
5	Read as an operator What decision cannot be made from this row?
8	Walk the OP20 example Where is actual evidence recorded?
10	Repair OP30 Which detail needs an owner rather than a guess?
5	Debrief change Which linked documents must agree?

Debrief

1. Accept different suitable record designs with clear ownership.
2. Challenge any arbitrary sample rate offered as universally adequate.

Individual or remote practice

Write the abnormal-result scenario first, then see whether the proposed row supports it.

Connect the method and check its boundaries

Before application

1. Process-risk and characteristic identity
2. Approved criteria and measuring method

Outside this lesson

1. A licensed customer control-plan form
2. Automatic compliance or production authorization

AIAG/Plexus: APQP and control plan overview

AIAG/Plexus: APQP and control plan overview

Control plans link process risks and controls, with explicit reaction ownership, containment and return-to-control actions.

Public overview only. Do not reproduce licensed forms or infer a universal sampling frequency or safe-launch exit period.

Open this lesson and its visual aids