Jidoka and andon: detect, respond, verify restart

Connect an abnormality signal to containment, response ownership and verified restart, distinguishing signal reset from evidence that the process is ready.

The light is off, but the condition remains

Fictional assembly cell: operator Leon sees an incomplete fastening confirmation on unit V18 and raises the approved help signal. A colleague clears the display and proposes restarting because the light is no longer on. The response card requires confirmation of the fastening result and controlled review of potentially affected units.

Your role and the reference condition

Operator, team leader and authorized quality/equipment responder.
Normal: An abnormality receives a timely response; unsuitable output does not proceed, and restart follows the approved acceptance conditions.
Gap: Clearing a display has been confused with correcting and verifying the underlying condition.

Work within these conditions

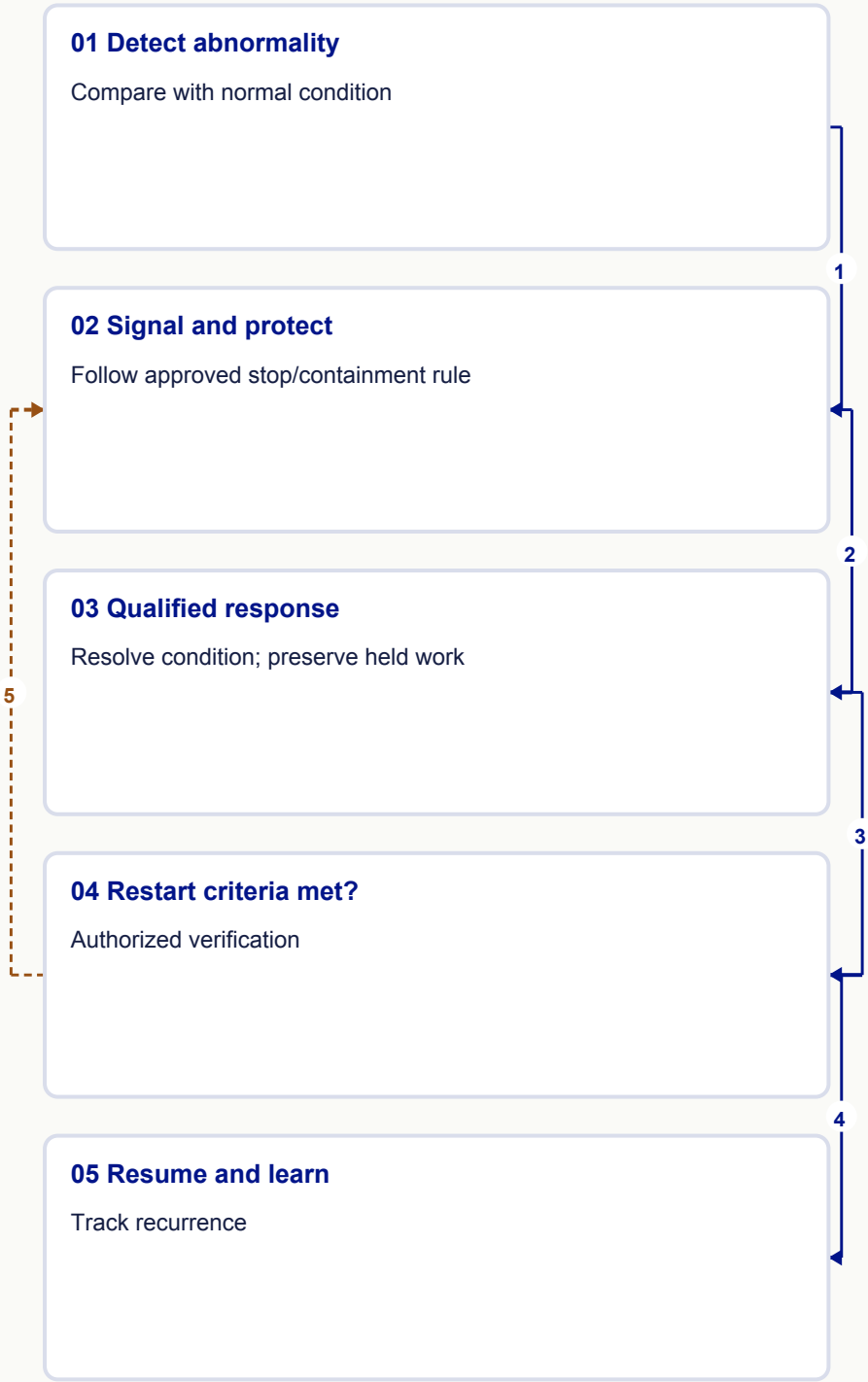
1. Use the site's actual approved stop/help procedure. A process andon is not a substitute for emergency response.

2. This exercise gives no equipment setting, isolation sequence or authority to override safeguards.

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

See how the method works

Detection only protects customers when it triggers a response. Define the normal condition, the abnormality signal, who responds and what must be verified before work resumes. When a problem appears, follow the approved stop and containment rule so suspect work does not escape. The responding leader or specialist resolves the condition and confirms the restart criteria. Record recurrence for deeper investigation. Different processes have different stopping conventions; a fixed-position production stop is not an emergency-stop instruction. A red lamp without response ownership and follow-through merely displays the problem. The system must help people surface trouble early.



Read every connection

1. Step 1 > 2
Abnormal

2. Step 2 > 3
Request support

3. Step 3 > 4
Resolution evidence

4. Step 4 > 5
Yes

5. Step 4 > 2
No: hold continues

Connected method map: Detect abnormality, Signal and protect, Qualified response, Restart criteria met?, Resume and learn. Every authored connection is shown with a numbered arrow and named legend.

Follow the evidence and decisions

Inspect the supplied case inputs

Event / requirement	Supplied evidence
Signal	Incomplete fastening confirmation on V18
Last verified boundary	V15 accepted before the abnormal sequence
Potentially affected	V16, V17 and V18 require review
Display	Reset by colleague; condition not verified
Restart criteria	Authorized process check and affected-output disposition
Owner	Team leader calls designated quality/equipment responder

01 / Treat the condition as the trigger

Leon identifies the observed incomplete confirmation and uses the approved response route. He records the unit identity and time, without guessing that the sensor or operator caused it.

Why: An andon makes an abnormality visible and requests response. A color change is not a root-cause finding.

Evidence / check: V18 and the missing confirmation are recorded as facts.

02 / Preserve the affected-output boundary

The responder uses the last verified evidence at V15 to identify V16-V18 for controlled review under the local procedure. Their status remains distinct from accepted output.

Why: Containment needs a justified boundary. Looking only at the signaled unit may miss earlier affected work; assuming every unit is defective also exceeds the evidence.

Evidence / check: Three potentially affected units identified; defect status not yet determined.

03 / Respond through the authorized owner

The team leader brings the designated responder to the actual condition, supplies the record and maintains the approved stopped/held state as required.

Why: The operator needs support and a known response, not pressure to clear the board. Technical adjustments belong to authorized people and procedures.

Evidence / check: Named responder, response time and investigation record are visible.

04 / Verify before restart

Check the prescribed process conditions and acceptance evidence, then record the authorized restart decision and the disposition of affected output. If criteria are unmet, continue the response.

Why: Reset, repair, verification and product disposition are separate events. None should be inferred from the display alone.

Evidence / check: Restart requires documented criteria met; V16-V18 remain controlled until disposition.

05 / Close the learning loop

Return the result to Leon and review recurrence, response delay and any weakness in detection or standard work. Update and teach approved changes through their owners.

Why: Without feedback, people may stop raising useful signals. The system should learn from the abnormality rather than reward silence.

Evidence / check: Operator feedback and a recurrence review are part of the completed response.

Completed abnormality-response trace

Stage	Evidence	Decision
Detect	V18 confirmation missing	Raise approved help signal
Contain	Last verified V15	Review V16-V18
Respond	Named quality/equipment owner	Investigate actual condition
Verify	Display reset only	Insufficient for restart
Learn	Response/recurrence record	Feed back to operator

The responder cannot attend immediately

The designated responder is unavailable and a production target is approaching.

Decision

Follow the approved escalation and safe-state procedure; the target does not create restart authority.

Reasoning

A missing response route is a system issue to expose, not a reason to substitute unverified output.

What would change the decision?

Escalation owner, current state and next contact are recorded.

Practise with a changed case

A labeling confirmation fails

Separate fictional packing line: unit P24 has an unreadable verification result. P20 is the last unit with confirmed acceptance; P21-P24 have been produced since. An operator resets the light.

Input	Value
Last verified unit	P20
Signal unit	P24
Intervening units	P21, P22, P23, P24
Display status	Reset; no verification result

Your task

1. Identify the potentially affected range without calling all items defective.
2. Write the next response and restart evidence.
3. Explain why the reset alone cannot release the range.

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

Your practice worksheet

A labeling confirmation fails

Observed condition and identity

Last verified boundary

Potentially affected units

Authorized verification/disposition

Operator feedback and recurrence check

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

Check your reasoning and transfer it

1. The supplied boundary identifies four potentially affected units, P21-P24. Their suitability needs the approved review.

2. Use the named response/escalation owner; obtain process verification and product disposition under the actual criteria.

3. A display reset reports a control action, not proof of suitable labels or a corrected process.

Suggested completed record

Item	Evidence	Conclusion
Boundary	P20 accepted	Review starts after P20
Affected range	P21-P24	4 units potentially affected
Reset	No verification	No release inference
Restart	Criteria and authority needed	Record decision

Plausible wrong turns

1. An andon is not merely a colored performance display.

2. A reset is not a verified corrective action.

Evidence of a sound answer

1. Use a justified containment boundary.

2. Keep product and process decisions distinct.

3. Retain an authorized response and feedback loop.

Take the learning back to work

Commitment	Agreed follow-through
Owner	Cell leader with authorized quality/equipment owners
Record	Abnormality, containment, verification, disposition and feedback record
Review	At response closure and the next recurrence review
Verification evidence	Criteria-based restart, controlled affected output and timely operator support
If unresolved	Escalate response capacity and unresolved conditions; retain the required controlled state.

Help someone else apply the method

Prepare

1. Unit identity cards and response-state tokens
2. Approved-procedure placeholder rather than invented technical instructions

Minutes	Activity and coaching prompt
4	Read the abnormality What was observed, and what is only a guess?
8	Set the review boundary Why start with V16 rather than only V18?
8	Work the labeling variant What does resetting the light establish?
5	Close the response What should the operator hear back?

Debrief

1. Challenge pressure to treat the target as restart authority.
2. Distinguish a normal process help signal from emergency procedures.

Individual or remote practice

Write separate detect, contain, respond, verify and learn records; do not merge them into a single "fixed" box.

Connect the method and check its boundaries

Before application

1. Approved response authority
2. Clear acceptance condition

Outside this lesson

1. An andon lamp alone is not jidoka
2. A process-stop convention is not emergency-stop guidance

Toyota Virtual Plant Tour: Production System

Toyota Virtual Plant Tour: Production System

Andon response, stopping on abnormality, mistake prevention

Method reference; original OPEX scenario and diagram are synthetic teaching content, not source case results.

LEI: Andon

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Abnormality signal summons response; fixed-position process stop differs from emergency stop

Method reference; original OPEX scenario and diagram are synthetic teaching content, not source case results.

Open this lesson and its visual aids