

Problem Solving: Test the Explanation Before the Fix

Todd Jerome Jenkins | v1.0 | Reviewed October 9, 2026 | Discussion + field checks

Why this matters

When a problem repeats, the first explanation can become the accepted cause before anyone checks it. Separate what was observed from why people think it happened. Keep current exposure controlled while the team gathers evidence; uncertainty is not permission to experiment on operating equipment.

Objective: Describe one work problem without assuming its cause, then identify a safe evidence check and a observable improvement.

Key hazards or failure points

A favored explanation; missing work context; fixing symptoms; unsupported cause claims; unauthorized troubleshooting; a change introducing another hazard; closure based only on completed paperwork.

Practical controls

- Write the observed difference between expected and actual conditions. Include location, timing and the people affected. Ask those doing the work what they encountered; preserve information that does not fit the first explanation.
- List plausible explanations separately from observations. Involve the required technical people and choose an authorized way to examine the evidence. Maintain interim protection; do not disable safeguards or recreate a hazardous failure.
- Before implementing a proposed fix, obtain its required review and authorization. Identify the expected result, responsible owner and follow-up method. Retain safeguards until the approved replacement controls are ready.

Verify It in the Field

Use a deidentified paper example. Ask the crew to underline observations and circle assumptions in the problem statement. Rewrite a label such as careless work as the actual condition observed; record what remains unknown. Choose one explanation and identify evidence that could support or contradict it. Locate the governing procedure and authorized verifier for any field check. If no safe approved method is available, record the gap and refer it rather than testing.

Trace one approved action to a real control check. Record the acceptance source, method, actual finding, checker and time, then compare the result with the stated objective. Schedule a later check where continued performance matters.

Stop and reassess

Hold affected work when protection is uncertain, evidence conflicts or a proposed check exceeds authority. Use the task's safe-state process and escalate. Do not declare a cause proved by agreement or one successful attempt. Correct the plan and verify required conditions before authorized restart.

Ask the crew

1. What did we actually observe?
2. What evidence could challenge our explanation?
3. How will we know the change helped?

Use the task plan and required specialist decisions before exposure.

Sources: DOE-HDBK-1028-2009, Vol.2, pp.61,62; OSHA recommended practices.

Free next step: [JHA/JSA planning & field-verification worksheet](#)

Expanded guidance and separate forms: toddjeromejenkins.com/toolbox-talks/problem-solving-test-explanation-before-fix

Based on DOE-HDBK-1028-2009, Vol. 2 (June 2009). No claim to authorship or copyright ownership of original U.S. Government work. Todd Jerome Jenkins adaptation; no government endorsement implied.