



ProofCheck™

Comprehensive SIS Validation and Proof Test Procedures Made Easy

AMS


EMERSON™



Automated, Repeatable, Reliable Execution

ProofCheck™ delivers a comprehensive out-of-the-box testing solution for Safety Instrumented Systems (SIS). ProofCheck™ incorporates all elements of proper SIS Validation and Proof Testing in a single solution. Validate sensors, wiring, signal conditioners, safety logic, final control element response, as well as manual inspections.

The customizable procedures drive efficient, repeatable, reliable testing processes, and ensure equipment is properly set for safe return to operations.

Procedure execution data is captured electronically and validated against predefined limits. ProofCheck™ shows pictures, manuals, loop sheets, and any information required by a technician to perform the tests. The built-in reports and monitoring screens show test progress, highlight errors, as well as provide the documentation required for permanent record.

The screenshot shows a tablet interface for 'Boiler 1 Manual Steps'. It includes sections for 'Boiler 1: Unit Status' (Decommissioned), 'Acknowledge' (Operator Notified), 'Boiler 1: Man Temp Gauge' (Record Temperature: 180.00), and 'Boiler 1: Man Press Gauge' (Record Pressure: 14.00). There is also an 'Information' section for 'Verify Lockout' and a 'Boiler Automated Steps' section showing 0/10 steps completed. At the bottom, there is a 'Boiler 1 Pressure SIF' section with a 'Pressure QuickStep Group' button.

Intelligent Field Device Loop Testing

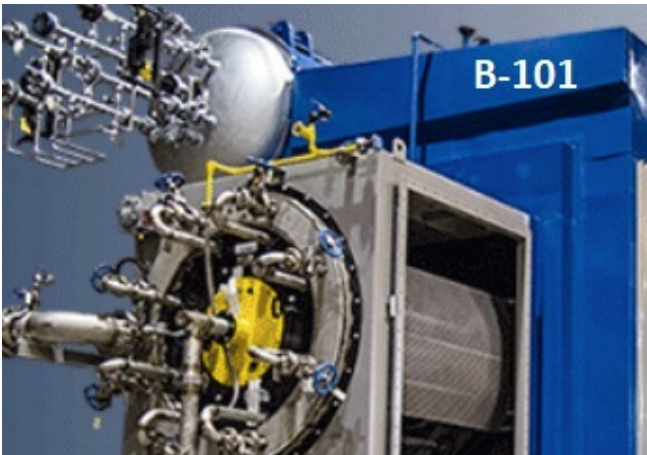
Validation and periodic Proof Testing requires sending signals from the field instruments. This process verifies not only the instrument, but also wiring, junction boxes, and signal conditioning between device and the SIS. Sending technicians to the field with handheld communicators to manually set devices in loop test mode is time intensive, error-prone, and may expose the field technician to a variety of hazards including heights, temperature extremes, and chemicals.

ProofCheck allows the technician to set the output of transmitters from a workstation or tablet. This non-intrusive testing automatically returns devices to their proper state after testing. ProofCheck allows for automated testing of your plant's SIS voting logic.

Automatically Recording SIS Response

As the procedure is executed, ProofCheck records HART field devices response, OPC variable values, manual inputs, while automatically verifying that the test criteria are met. For systems such as Emerson's DeltaV™ SIS, ProofCheck can even verify that the safety logic has not changed by verifying the SIS System CRC codes.

Assets Procedures Translation Library QuickStep Groups Import/Export						
Aliases						
QuickStep Groups						
104						
Boiler 1 Pressure SIF						
Boiler 2 Pressure SIF						
151						
151 - Boiler 1 SIF 1						
151 - Boiler 2 SIF 1						
151 - LRG Boiler Group						
151 - QS Verification - i						
151 - LRG Boiler Group						
A Folder						
B1 Man PT						
Boiler 1 Pressure SIF						
Fixed Output Readbacks Reset Manual Steps Prerequisites						
Step	Description	PT-4003/PV	PT-4001/PV	PT-4002/PV		
1	Reset All	«	«	«	⛔	✅
2	One High	«	100 %	«	⛔	✅
3	Two High	9 psi	20 mA	«	⛔	✅
+ -						



Boiler 1 Manual Steps

1. Record Unit Status
2. Acknowledge after notifying operator SIF Testing is about to begin
3. Record Temperature on the manual guage
4. Record Pressure on the manual guage
5. Start SIF testing in next section after operator places boiler in lockout mode.

Capture Manual/Visual Verification

Many testing steps and activities performed for safe return to operations, require manual interaction. ProofCheck captures these manual/visual verifications and validates technician responses in the same manner as automated verifications.

Manual verifications can capture items like:

- Did the valve stem move?
- Did the light/siren activate?
- Instruct an operator to press the reset button after a trip
- Set/reset a breaker
- Any manual action
- Operators can add notes/pictures to the record

Safe Return to Operations

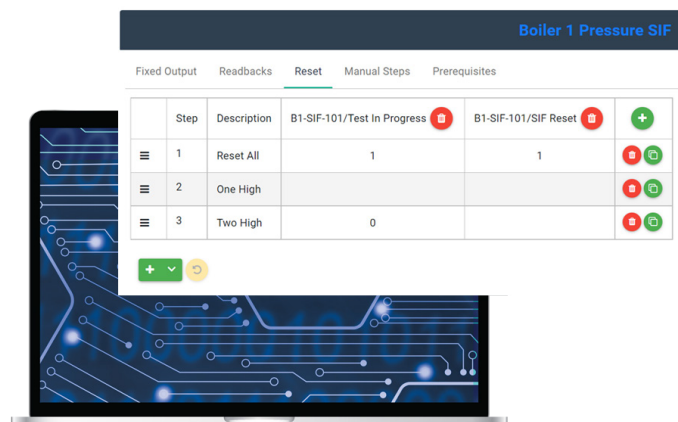
IEC 61511 provides guidelines for safety testing, and safe return to operations. This includes testing all the SIF functions including redundancies, bypass, reset, and other potential safety states. Proper testing requires checking these SIS and device functions. In addition, after testing ensuring the SIS system, and field devices are back to the normal operation settings, alarms are enabled, and test materials and tools were removed. The comprehensive validation provided by ProofCheck out-of-the-box makes it easier to ensure compliance.

BPCS Test Procedures

In addition to thoroughly testing SIS, ProofCheck can verify Basic Process Control Systems (BPCS), commonly known as Distributed Control Systems (DCS), Programmable Logic Controllers (PLCs), and other automations systems at the site.

ProofCheck is a perfect fit for testing these other systems along with their connected field devices.

The test procedure can set/reset any variable, set a recipe variable, enable/disable alarms or any other required value for testing/return to operations. Automated BPCS trip resets or alarm acknowledgements can also be set by ProofCheck allowing comprehensive testing for all systems at the site.





Built-In Reports

Our built-in reports provide all the information needed for compliance, auditing, and quickly determining what needs to be fixed. Reports expedite safe and efficient return to operations and eliminate countless hours of paperwork processing.

Spend time improving your plant's safety, and optimizing your process, instead of filling out forms.

Overdue Procedures				
Procedure	Scheduled	Overdue	%	Failed
Boiler Check	Feb 28, 2022 4:00 PM	Feb 28, 2022 4:30 PM	0%	0
Boiler Check	Feb 28, 2022 8:00 PM	Feb 28, 2022 8:30 PM	0%	0

In Progress Procedures				
Procedure	Scheduled	Overdue	%	Failed
BMS Test 1	Feb 26, 2022 9:38 AM	Jan 1, 2072 12:00 AM	0%	0
BMS Test 1	Feb 26, 2022 12:58 PM	Jan 1, 2072 12:00 AM	33%	2
BMS Test 1	Feb 26, 2022 1:24 PM	Jan 1, 2072 12:00 AM	16%	0
Boiler 1 SIF1	Feb 28, 2022 10:26 AM	Jan 1, 2072 12:00 AM	0%	0
Boiler Check	Feb 28, 2022 10:31 PM	Jan 1, 2072 12:00 AM	100%	5
Boiler Check	Feb 28, 2022 11:39 PM	Jan 1, 2072 12:00 AM	28%	2
Client 1 proc	Feb 28, 2022 11:47 AM	Jan 1, 2072 12:00 AM	100%	1

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