



STANDARD OPERATING PROCEDURE

Maintenance Inspection and Testing of Pressure Reliving Devices

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Crop Protection Chemicals
Coromandel International Limited

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1.0 PURPOSE

The purpose of this procedures is to ensure that preventive maintenance, Inspection and pressure test of a pressure relieving Device (PRD) like pressure safety valves (PSV), Safety Relief Valve (SRV), Pressure regulating valve (PRV) and Pressure relief valve is conducted safely and effectively.

2.0 SCOPE

This procedure is applicable to servicing, preventive maintenance, inspection, setting and testing of all pressure relieving devices in Coromandel International Ltd. Sarigam unit.

3.0 RESPONSIBILITY

3.1 Asst. Manager/Sr. Officer Instrument and instrument technician

- Responsible for
 - Timely doing the preventive maintenance and inspection of PRDs safely as per given frequency.
 - Ensure the checklist properly filled with co-ordination of process person.

3.2 Area owner (Production)

- Responsible for
 - Give process clearance to do the preventive maintenance and inspection of particular PRDs (as per scheduled tag name) safely.
 - Ensure the job is doing as per sop and verify the checklist of PRDs

3.3 Section Head Instrument

- Accountable for
 - Reviewing the above job and if any deviation found then correct it within minimum time period.

4.0 DEFINITION

Pressure Safety Valve: A valve which automatically discharges gases and vapors so as to prevent a predetermined safe pressure being exceeded. It is characterized by a rapid full opening action and is used for steam, gases or vapor service.

Pressure Relief Valve: A valve which automatically discharges fluid, usually liquid, when a predetermined upstream pressure is exceeded. The term is commonly used for pressure relieving valves in which the lift is proportional to the increase in pressure above the set pressure.

Pressure Regulating Valve: It is a control valve that reduces the input pressure of a fluid to a desired value at its output. These are used for Steam, gases and liquids and can be an integral device with an output pressure setting


Safety Relief Valve: A valve which will automatically discharge gases, vapours or liquids, to prevent a predetermined safe pressure being exceeded. It is characterized by a rapid opening action.

Set Pressure: The pressure measured at the valve inlet at which a safety relief valve should commence to lift under service conditions.

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Popping Pressure: The pressure at which the valve disc rapidly moves from a slightly open (simmer) position to a practically full open position.

Discharge Capacity: Actual rate of discharge of service media, which can be expressed in mass flow or volumetric terms.

5.0 PROCEDURE

5.1 Frequency: Once in a year.

5.2 Health & safety:

One of the most significant health and safety risk during testing is position of people. Person should not be in front of pop nozzle. PRD must be cleaned and ensure the equipment have no hazardous material. In addition, the following personal protective equipment (PPE) should be worn during maintenance activities:

Safety Shoes

Helmet

Safety goggle

Work Gloves

Special PPE which would be recommended by process person

5.3 Tools Requirement:

Hydraulic pump

Water bucket

Pressure Gauge/ Digital Pressure gauge (recently calibrated)

Pneumatic Hand pump with Digital pressure gauge

Wise bench

Flanges with required connecting fittings

PU tubes

Required spanners

Required Screwdrivers and other required tools

Required spares like soft O-rings, gaskets etc.


5.4 Flow of activities

- Take cold work permit and pipe opening permit from the shift/area in-charge to inspect/testing of PRDs.
- Ensure the isolation valve is closed if available there.
- Remove the PRD with the help of mechanical fitter from the line/equipment and put blind in upstream and downstream line.

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- Lowering and shifting the PRD to workshop from the process plant.
- Fixing the PRD vertically on the wise bench.
- Check the outer condition of PRDs, whether it corroded or not and the painting is good or not.
- Dismantling, internal inspection, cleaning, and servicing the internal and lapping of seats of PRD wherever required.
- If machining of nozzle and disc or any other part of PRD is require than arrange it to get the job done.
- After that reassembly of the PRD.
- Testing the PRD at the defined set pressure by pneumatic test or hydro test and ensure the seat tightness of PRD and it shall be witnessed by Instrument engineer and operation person.
- Consider the leakage test (pneumatic) of the PRDs by using soap solution for joints and for outlet nozzle, must be connect a tube which immersed in a bucket of water.
- If any bobble comes (if pneumatically test) or water drop found (if Hydraulic test), repair it recheck to be done.
- Filled up the checklist (INST/F/10 or SGM/IND/F020-00) and signed including all witness.
- After testing, re-installed the PRD (from where removed) with new suitable gasket with the help of mechanical fitter.
- Hand over the PRD to the shift/area in-charge.
- Close all the permits.
- Note the job in shift record book and attach the signed checklist in preventive record file.

6.0 FORMS AND RECORDS

INST/F/10 for preventive maintenance of PRV

SGM/IND/F020-00 for Preventive maintenance of PSV, SRV and Pressure relief valve

7.0 ABBREVIATIONS

PRD : Pressure Relieving Device

PRV : Pressure Regulating Valve

PSV : Pressure Safety Valve

SRV : Safety Relief Valve

PPE : Personal Protective Equipment

PU : PolyUrethane

Inst : Instrumentation

e.g. : Example


SOP : Standard Operating Procedure

Dept : Department

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8.0 REFERENCES

NILL

9.0 REVISION HISTORY

Date	Ver./Rev. no.	Reason for Revision	Author	Designation
	00 / 00	New SOP developed as per the updated SOP format	Mitul Bhavsar	Sr. Officer. Instrumentation

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