# STANDARD OPERATING PROCEDURE

# Maintenance and Testing of Fire Alarm System

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| **Details** | **Prepared by** | **Reviewed by** | **Approved by** |
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## Crop Protection Chemicals
## Coromandel International Limited

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## 1.0 PURPOSE

The purpose of this procedure is to ensure that preventive maintenance and testing of a fire alarm system is conducted safely and effectively.

## 2.0 SCOPE

This procedure is applicable to servicing, preventive maintenance and testing of fire alarm system in Coromandel International limited, Sarigam unit.

## 3.0 RESPONSIBILITY

### 3.1 Asst. Manager/Sr. Officer Instrument and Instrument Technician

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

### 3.2 Area Owner

- Responsible for
  - Give process clearance to do the preventive maintenance and testing of particular fire alarm system (as per scheduled tag name) safely.
  - Ensure the job is doing as per SOP and verify the checklist of fire alarm system.

### 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

**Fire Alarm System:** A multiplexing system in which signaling devices such as transponders are employed to transmit status signals of each initiating device or initiating device circuit within a prescribed time interval so that the lack of receipt of such a signal can be interpreted as a trouble signal.
**Smoke Detector:** A device that detects visible or invisible particles of combustion.

**Beam Detector and Reflector:** A type of photoelectric light obscuration smoke detector wherein the beam spans the protected area.

**Heat Detector:** A fire detector that detects either abnormally high temperature or rate of temperature rise, or both. A line-type or spot-type sensing element in which resistance varies as a function of temperature.

**Manual call point:** Manual alarm call points are designed for the purpose of raising an alarm manually once verification of a fire or emergency condition exists, by operating the push button or break glass the alarm signal can be raised.

**Sounder:** Electronic Hooters are used in fire alarm system to alert people in case of fire. It is usually fully solid state with an audio output that is high enough for it to be heard at a distance that is not less than 50 meters. The units are always located at critical area and have minimum audible level that is around 85dB. Hooters are typically connected with detectors loop with help of addressable control module.

## 5.0 PROCEDURE

**5.1 Frequency:** Six month.

**5.2 Health and Safety:**

One of the most significant health and safety risk during maintenance and testing is position of people. FAS and sensing devices must be cleaned and ensure the equipment have no hazardous material/Dust. In addition, the following personal protective equipment (PPE) should be worn during maintenance activities:

Safety Shoes
Helmet
Safety goggle
Work Gloves
Cotton/Organic Mask
Ladder
Safety full body harness
Special PPE which would be recommended by process person

**5.3 Tools Requirement:**

Screwdrivers
Allen key set
Other required tools e.g. air blower, cotton waste.
Testing kit like Foam (Solo make A3 smoke detector tester), UV Non-transferable solid object.
Magnet.

**5.4 Flow of Activities for Smoke Detector**

- Take cold work permit and height work permit from the shift/area in-charge to testing/maintenance of smoke detectors.
- Switch off the power of fire alarm system.
- Clean the smoke detector with cotton waste or air blower.
- Switch on the power of fire alarm system.
- Check the loop is connected to fire alarm system, which indicates on fire alarm system control panel.
- Check the smoke detector with foam (Solo make A3 smoke detector tester) spraying on it.
- Check the fire indication and address showing on fire panel.
- Ensure that all sounders are activated or not.
- Press silent key to acknowledge the sounder.
- Remove/clean the foam on detector.

- Press reset key with entering the reset password at control panel.
- Hand over the system to the shift/area in-charge to take it in operation.
- Close all the permits.
- Note the job in shift record book and attach the signed checklist in preventive record file.

### 5.5 Flow of Activities for Beam Detector and Reflector

- Take cold work permit and height work permit from the shift/area in-charge to testing/maintenance of smoke detectors.
- Switch off the power of fire alarm system.
- Clean the Beam detector and Reflector with cotton waste or air blower.
- Switch on the power of fire alarm system.
- Check the loop is connected to fire alarm system, which indicates on fire alarm system control panel.
- Check the Beam detector and Reflector with non-transferable solid object by placing it between Beam detector and Reflector.
- Check the fire indication and address showing on fire panel.
- Ensure that all sounders are activated or not.
- Press silent key to acknowledge the sounder.
- Remove the non-transferable solid object placed between Beam detector and Reflector.
- Press reset key with entering the reset password at control panel.
- Hand over the system to the shift/area in-charge to take it in operation.
- Close all the permits.
- Note the job in shift record book and attach the signed checklist in preventive record file.

### 5.6 Flow of Activities for Manual Call Point

- Take cold work permit from the shift/area in-charge to testing/maintenance of Manual Call Points.
- Switch off the power of fire alarm system.
- Clean the Manual Call Point with cotton waste or air blower.
- Switch on the power of fire alarm system.
- Check the loop is connected to fire alarm system, which indicates on fire alarm system control panel.
- Check the Manual Call Point by removing glass cover glass cover.
- Check the fire indication and address showing on fire panel.
- Ensure that all sounders are activated or not.
- Press silent key to acknowledge the sounder.
- Refitted glass cover of Manual Call Point.
- Press reset key with entering the reset password at control panel.
- Hand over the system to the shift/area in-charge to take it in operation.
- Close all the permits.
- Note the job in shift record book and attach the signed checklist in preventive record file.

### 5.7 Flow of Activities for Heat Detector

- Take cold work permit from the shift/area in-charge to testing/maintenance of Heat Detector.
- Switch off the power of fire alarm system.
- Clean the Heat Detector with cotton waste or air blower.
- Switch on the power of fire alarm system.
- Check the loop is connected to fire alarm system, which indicates on fire alarm system control panel.
- Check the Heat Detector by magnet.
- Check the fire indication and address showing on fire panel.
- Ensure that all sounders are activated or not.
- Press silent key to acknowledge the sounder.
- Remove the magnet from heat detector body.
- Press reset key with entering the reset password at control panel.
- Hand over the system to the shift/area in-charge to take it in operation.
- 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

SGM/IND/F024-00 for preventive maintenance of fire alarm system

## 7.0 ABBREVIATIONS

FAS : Fire alarm system
PPE : Personal Protective Equipment
Inst : Instrumentation
e.g. : Example
SOP : Standard Operating Procedure
Dept. : Department

## 8.0 REFERENCES

Vendor/supplier

## 9.0 REVISION HISTORY

| Date | Ver./Rev. no. | Reason for Revision | Author | Designation |
|---|---|---|---|---|
| | 00 / 00 | New SOP developed as per the updated SOP format | Yogesh Patil | Sr. Officer Instrumentation |