



## Management of Environmental Alarms

Last issue explained that environmental impacts at mills and factories are monitored with measuring instruments. Combining alarms with continuous measuring instruments or detectors is effective in preventing environmental incidents. This issue explains the function and the management of environmental alarms.

### Function of Environmental Alarms

Alarm sounds and lights notify operators of exceeding the control limit or detecting anomaly such as oil film, without delay. This enables operators to prevent environmental incidents or to reduce environmental impacts by appropriate initial measures. The Oji Group guides mills and factories to install alarm lights linked to the continuous measuring instruments for wastewater and exhaust gas which are subject to regulations, and to ensure that the alarm lights continue lighting until the anomaly is resolved.

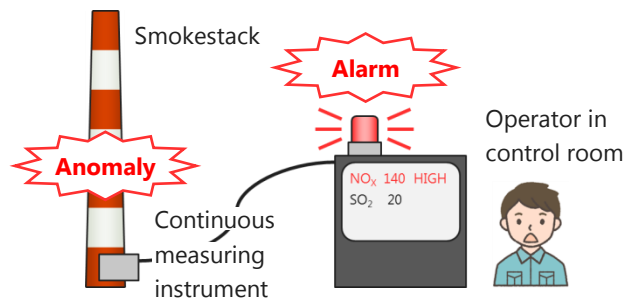
#### Alarm linked to continuous measuring instrument for exhaust gas

The alarm is activated when a measured value such as  $\text{NO}_x$  exceeds the control limit.



Operators notice anomaly, check the operation status and take action.

Note: Operators need to understand the procedure when the control limit is exceeded. (e.g., equipment shutdown)



### Management of Environmental Alarms

We should check whether alarms are installed and operated properly. Furthermore, periodic inspection (e.g., operation verification) and maintenance are necessary for alarms as well as measuring instruments.

**Installation:** sound/light can be heard/seen by someone at any time; sound is not too soft (risk of failing to notice), not too loud (risk of noise complaint); light is clearly identified (not similar to other lights); etc.

**Operation:** alarm is set appropriately; setting is not changed or disabled without permission; alarm continues sounding/lighting until anomaly is resolved; procedure when alarm is activated is clear; etc.

#### Environmental incidents caused by improper management

- Leaked oil was not treated and flowed out of the mill because alarm sound of an oil film detector at the wastewater gutter was too soft for operators to notice it.
- pH of effluent water exceeded the regulated standard because operators did not follow the prescribed procedure, when alarm notified them of exceeding the control limit.

We will think about environmental inter-locking system in the September issue.



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