

Survey for Safe Use of Non-Explosive Equipment on the Premises of Plants (Summary)

(1) Purpose

The FY2019 survey aims to **prepare guidelines** for approaches to safe use of electronic equipment and other devices while keeping the level of safety stipulated in laws and regulations as shown in the Explosion-Proof Policies and other guidelines, and to **expand use of IoT equipment and other devices on the premises of plants.**

(2) Outcomes

- Guidelines
(formulated by the National Institute of Advanced Industrial Science and Technology (AIST))
- Voluntary Action Plans (prepared by two companies)

(3) Frameworks

- Expert Committee chaired by Dr. Mitsuru Arai, Professor of the University of Tokyo
 - Working Group
- Note: Secretariat: AIST and the Japan Society for Safety Engineering (JSSE)

Discussion Policy

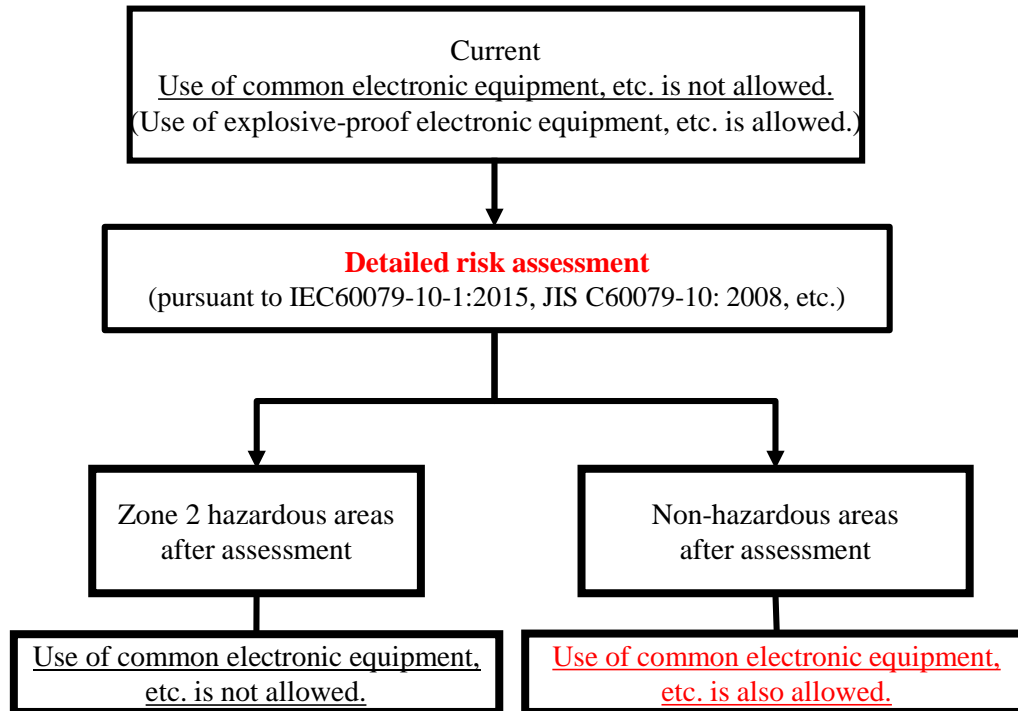
Reassess hazardous areas categorized in Zone 2 (explosion-proof areas; hereinafter referred to as “Zone 2 hazardous areas”), taking advantage of the “latest IEC standards”

- Plant operating companies should set Zone 2 hazardous areas (explosion-proof areas) on the premises of plants under the Explosion-Proof Policies. However, in the current situation, many such companies essentially set the entire premises to which facilities inside plants belong as Zone 2 hazardous areas.
- The latest IEC standards stipulate meticulous approaches to setting hazardous areas. In accordance with the standards, companies should reassess the current Zone 2 hazardous areas and thereby be able to set such hazardous areas without lowering the level of plant safety stipulated in the existing Explosion-Proof Policies.

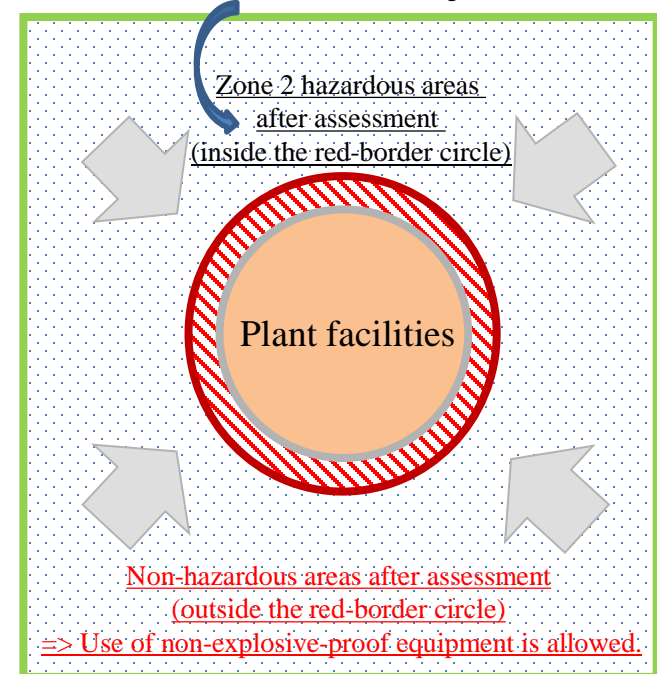
Currently, the approaches to setting hazardous areas under the Explosion-Proof Policies are based on the JIS, the standards pursuant to the IEC standards. However, the latest IEC standards, according to which companies may precisely set such areas, do not explicitly apply mutatis mutandis to the policies.

*Note: These IEC standards are international standards stipulated by the International Electrotechnical Commission (IEC).

Approaches to and conceptual overview of expanding the safety areas in which companies are allowed to use non-explosive-proof equipment

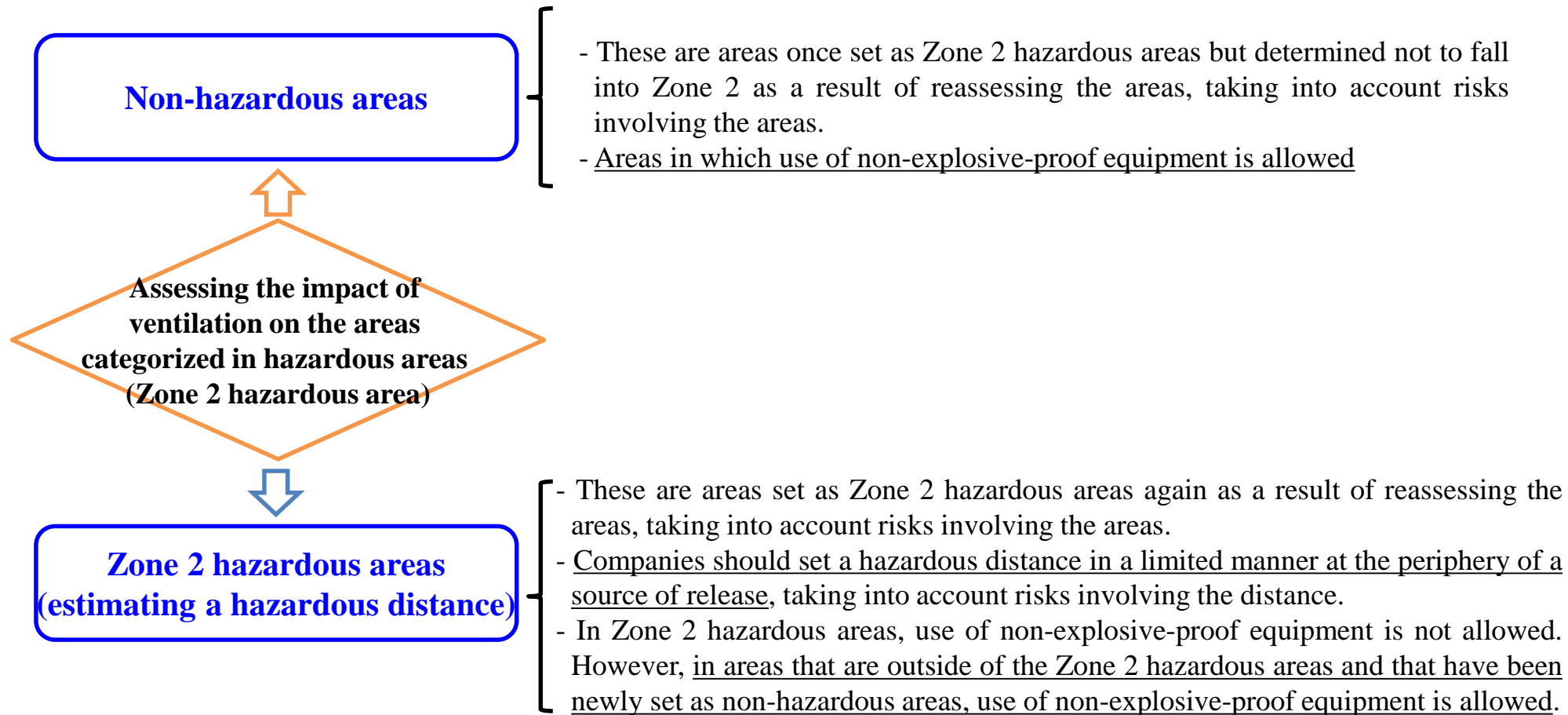


Current Zone 2 hazardous areas (inside the green-border box below)



Discussion Policy

- Companies should precisely assess risks further lying at the periphery of a source of release, taking advantage of the latest IEC standards.
- Specifically, they should assess risks based on inspection results of the area of leaking holes, characteristics of release, the velocity of ventilation, the ventilation performance and other elements and should set hazardous and non-hazardous areas.



Flow of Assessing Non-Hazardous Areas (Pursuant to the IEC Standards)

