

## **Fire Safety Protection Assessment of Industrial Technologies**

*Members of CFP A-E in collaboration with industrial representatives and academics published international research article focused on fire safety protection assessment of industrial technologies. This procedure respects CFP A-E guidelines and provides application of guidelines in practice. Application of this assessment can be used for increasing monitoring and protection efficiency or investment in fire protection systems.*

**Authors: Kamila Kempna-1,2; Jan Smolka-1,2; Milos Kvarcak-1; Ivan Kricfalusi-3; Zdenek Stejskal-4; Tomaz Hozjan-5; and Dionysis Kolaitis-6;**

**1 – VSB – Technical University of Ostrava, Czech Republic**

**2 – Majaczech, z.s., Czech Republic**

**3 – HSE, New Eltom, s.r.o., Czech Republic**

**4 – CEPRO, a.s.**

**5 – Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia**

**6 – Department of Chemical Engineering, National Technical University of Athens, Greece**

### **Abstract**

An accident in petrochemical industry can cause serious damages to human and animal health, property, environment and economy. That was proved by many accidents in the past. National laws, regulations, national, European or international standards or accepted protection principles define minimal requirements for safety and security protection of technologies. This restriction defines specific protections and periodical personal controls. Companies in petrochemical industry are often split in branches with specific types of technologies – pumping stations, storages, distribution lines, etc. Each of these technologies represents specific hazards for employees, environment, surrounding area or economy (national, organizational). Especially oil storages and farms represent strategical importance for national safety and continuity.

Increasing of protection is often organized individually in specific branches of the organizations. It can cause that the same organization has different protection of the same technology. That is the reason why many organizations design safety policy on higher level than is legally requested by insurance companies or by internal safety policy. The increase of policy is connected to increase of number of personal controls which can be implemented up to every hour per day, or to application technical protection. The technical protection can include leakage sensors, sprinkler systems, emergency reservoirs, process monitoring (pressure, temperature, mass flow, etc.) or CCTV systems. The uniform protection within the organization on the same technologies can increase employees working time efficiency, increase level of protection and decrease financial losses. For these purposes the evaluation of technical protection with impact on number of personal controls have been designed and described in this paper.

Presented system of assessment evaluates specific hazards and possible impact including possible damages to human health, property or environment with

considered type of technology. Moreover, the building and technological protection is considered, as well as the fire protection systems, alarm systems, and monitoring cameras systems. Final number of personal controls of technology is based on type of organization, hazards and protection. A resulting recommended number is compared with required legal number of controls.

**Main benefits of screening assessment are:**

- 1) Allow planning of flat investments and development of technologies and its protection
- 2) Increasing efficiency of workforce
- 3) Defining critical areas for technical development – application of CCTV, modern detection systems, etc.
- 4) Increasing efficiency of working time of employees – e.g. replacement personal screening by CCTV systems
- 5) Decreasing costs of control and service actions

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