

## OIL AND GAS PROCESSING FACILITIES

### DISCUSSION

Oil and gas processing buildings are often classified as Group F, Division 1, high hazard industrial occupancies because of the nature of the processes being housed. Industry has expressed concern that the requirements in the Alberta Building Code for high hazard industrial occupancies do not address the hazard presented by these buildings as effectively and efficiently as possible.

Life safety in industrial occupancies often depends as much on work procedures, worker training and worker experience as it is on the provision of fire containment or fire suppression systems incorporated into the building's construction.

To create a safe work environment, many oil and gas companies, in cooperation with various other government departments, have researched and developed training, work procedures and equipment in great depth to produce safety "packages" more specific and more comprehensive than the requirements in the Alberta Building Code or the Alberta Fire Code. One such package is described in the document titled, "Safety Guidelines for Small, Portable Oil and Gas Production Facilities: Training, Operating and Design Recommendations" produced by the Canadian Association of Petroleum Producers (CAPP).

### APPLICATION

This STANDATA applies to oil or gas processing buildings that are

1. considered as low human occupancy buildings,
2. located outside of urban areas, and
3. used to house oil and gas processing equipment, such as
  - a. compressor stations,
  - b. heater packages,
  - c. pump packages,
  - d. separator packages,
  - e. treater packages,
  - f. dehydrator units,
  - g. field equipment,
  - h. L.P.G. handling facilities,

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Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2006.

- i. refrigeration process units,
- j. oil batteries, and
- k. similar types of buildings.

This STANDATA does not apply to residential buildings, office buildings, warehousing and other buildings not specifically used for oil or gas processing even though they may be located on the same site.

## **VARIANCE**

Oil and gas processing buildings need not conform to the requirements for Group F, Division 1, high hazard industrial occupancies in the Alberta Building Code 2006 provided

1. A risk assessment has been prepared by a professional engineer, licensed to practice in the province of Alberta, which includes
  - a. The determination of adequate rates of gravity and/or mechanical ventilation based on
    - i. requirements for electrical area classification and recommendations given in API RP500, "Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities" for normal or continuous operation,
    - ii. a minimum of 6 air changes per hour, or
    - iii. higher ventilation rates where sour gas may be present.
  - b. The installation of combustible and/or toxic gas detection,
  - c. The installation of emergency shut down stations with remote activators,
  - d. The installation of listed fire detection equipment (which may include flame detectors in lieu of smoke or heat detectors) to automatically shut down and depressurize the facility, and
  - e. The provision of a supply of water for external fire fighting for buildings in remote areas.

Note: The recommendations given by the Professional Engineer are to be listed in the building permit application submission.

2. The appropriate training and procedure measures outlined in the CAPP Guidelines are in place.

3. The following measures, as described by the CAPP Guidelines and/or the Alberta Building Code, are incorporated:
  - a. At least two exit doors are installed, equipped with panic hardware, and located remotely from each other where the building exceeds 7.4 m<sup>2</sup> in building area so that the travel distance to at least one exit from any point in the floor area does not exceed 25 m.
  - b. Buildings that are related functionally or through process may be considered as one building for the purposes of spatial separation between buildings.
  - c. Spatial separation calculations for limiting distances to property lines are calculated as per
    - i. Subsection 3.2.3. of the Alberta Building Code 2006 for Part 3 buildings, or
    - ii. Subsection 9.10.14. of the Alberta Building Code 2006 for Part 9 buildings.
  - d. Portable fire extinguishers are provided in accordance with the Alberta Fire Code 2006.

This VARIANCE applies throughout the province of Alberta.