

POLICY # 08-1

H-2 Pigging Modules Under 750 Square Feet
Located at Well Pad Type Facilities

It is the purpose of this policy to take a proactive approach in dealing with pigging modules (receiving/launching) located at well pad type facilities or more remotely, H-2 occupancies, less than 750 square feet aggregate.

INTRODUCTION/PURPOSE – Unique conditions and needs exist in the oil and gas industries on the North Slope. Piping access systems for pig launching/receiving operations are normally placed in the open air; however, due to the harsh winter conditions on the North Slope the oil and gas industries often use small structures to house these systems. By enclosing this pipeline access system, the module would be classified as an H-2 which requires that the module be provided with an approved fire suppression system and explosion venting. Many pigging module locations are at secure sites with limited access and are normally unoccupied and remote even from the major facilities on the North Slope.

With the remoteness from large numbers of personnel and the security at these sites, proper set backs from other buildings coupled with early flame, fire and gas detection as well as mandatory procedures for the removal of the product before opening the tube to the atmosphere, dangerous conditions are mitigated. Pigging modules that have these protections and also utilize a hot works program during pigging and other applicable activities can be permitted without an approved fire suppression system. This policy is in effect until modified or canceled by written notice.

The solutions proposed herein will form the basis for approval of applications for modifications where required. Proposed designs outside of these guidelines will be reviewed on a case by case basis.

I) IFC 903.2.4.1 – An automatic sprinkler system shall be provided in all H occupancies.

Problem – If the scenario of a leak in a module with only the required automatic sprinkler system is viewed, the hazard will not be detected until a fire produces enough heat to cause system activation. It is understood that activation of a sprinkler head is an “after the fact” occurrence.

Resolution – By use of an advanced safety system design features of the module site process, versus, the design limitations of the sprinkler or other approved suppression system, we will be taking a proactive approach by mitigating the hazard before there is a catastrophic event.

This policy is applicable only to pigging modules that meet all of the following criteria (1-10):

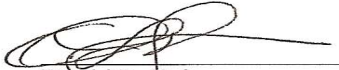
- 1) Located at a well pad/drill site type facility without a control room and where all buildings “unmanned” or more remotely located.
- 2) Less than 750 square feet in area.
- 3) There is a 60 ft separation from all other buildings, wellhead covers, equipment shelters, etc.
- 4) A flame, fire and gas detection system is installed to provide early detection of an incident.

- 5) A controlled procedure is in place requiring the pig barrel to be drained of liquids to an appropriate vehicle and purged (with nitrogen or other applicable medium) after pigging operations commence, the company procedure must be enclosed in the SFM plan review submittal and cannot be change at any time after without approval by the SFM.
- 6) A controlled procedure is in place during pigging operations, the facility will be manned and the hot works permit procedure will be followed, the company procedure must be enclosed in the SFM plan review submittal and cannot be change at any time after without approval by the SFM.
- 7) All process flow will be isolated outside the shelter with double block and bleed isolation during normal operations resulting in no flow in the building other than during the pigging operation.
- 8) The module is electrically classified as Class I Division 1
- 9) Mechanical ventilation system running at 6 air exchanges per hour at normal conditions. At 20% LEL, low level alarm, the mechanical ventilation will be increased to a high ventilation rate. At 60% LEL gas detection, emergency shut down procedures will begin, stopping the flow of any product to or from the facilities. Higher ventilation rates during pigging are permissible if deemed necessary during the engineering design of the facility.
- 10) ESD valves for the chemical injection quill and leak detection must be provided within the pigging module.

II) IFC 911.1 – Explosion controls shall be provided in all H occupancies.

Problem – Venting systems or panels are designed to relieve pressures at levels higher than rated internal wall panel systems that are normally used for Alaska Oil and Gas facilities.

Resolution - Examples of the effects of an internal gas pressure exceeding 1 psi have shown the wall panels in most instances will separate from the enclosure's structural steel thus relieving the internal pressure faster than a listed system/panel could. Therefore explosion protection will not be required for pigging modules (receiving/launching) located at well pad type facilities or more remotely, H-2 occupancies, less than 750 square feet aggregate which meet the criteria in Section II.


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Alaska State Fire Marshal

October 1, 2007

Rescinded by D. Tyler
September 15, 2008