An arrangement of an unmanned and remotely operated production facility

The present invention relates to an arrangement of an unmanned or normally unmanned and remotely operated production facility comprising a wellhead platform including a wellhead assembly having a X-mas tree, a flowline starting from an outlet point from the X-mas tree and transporting hydrocarbon fluids produced from a well via the wellhead assembly to one or more consecutive process equipment(s), and further on to a destination via a transport pipeline starting at a point located at a level lower than the outlet point.

According to one aspect, said arrangement is characterized in that any process equipment and/or pipeline section located at a higher level than said outlet point from said wellhead assembly, is arranged to either drain back to the x-mas tree, or drain downstream to said transport pipeline by assistance of respective valves arranged along said flowline.

The invention is also related to evacuation of liquids in a process system and more specifically evacuation of liquids from segments in a process system to other sections of the same process system and final pressure relief of the system.

The present concept which describes the system, the arrangement and a method for evacuating liquids in parts of a process system is typically applicable for use in situations where a shutdown of the process system is necessary, or that shut down of parts or components in the process system is necessary due to intrusive activities as maintenance and replacement of components.

For manned facilities, a dedicated closed drain system is well known technology for drainage of liquids from segments. This type of systems is in daily use in several locations. For such facilities, systems are manually drained prior to any intervention or during extended duration shutdowns. Liquids are typically routed

to a closed drain system, which collects and disposes of any liquids remaining in the segment.

From patent application PCT/NO2015/050135 a concept for drainage of liquids from a wellhead assembly is described. The concept describes a continuously sloping pipe arrangement from wing valve to riser for drainage of liquids under