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Abbreviations and expressions

TN-1

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Summary

Abbreviations and expressions

TN-1

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1 Introduction

This technical note gives abbreviations used in the main report and TN-2 – TN-6. Also the most important expressions used throughout the report are described in detail.

2 Abbreviations

Table 2.1 gives abbreviations used in the main report and TN-2 – TN-6.

Table 2.1 - Abbreviations used in the main report and TN-2 – TN-6

Abbreviation	Description
ASCV	Annulus safety check valve
ASV	Annulus safety valve
AWV	Annulus wing valve
BD	Blowdown
BOP	Blowout preventer
BORA	Barrier and operational risk analysis
DHSV	Downhole safety valve
EQCDB	Equipment count database
ESD	Emergency shut down
ESV	Emergency safety valve
GLV	Gas lift valve
HAZID	Hazard Identification
HC	Hydrocarbon
HCRD	Hydrocarbon release database
HSE	Health and safety executive
LFL	Lower flammability limit
LR	Lloyd's Register
MISOF	Modelling of ignition sources on offshore oil and gas Facilities
N/A	Not applicable
NCS	Norwegian continental shelf
OMT	Organisation, Man and Technology
PLOFAM	Process Leak for Offshore installations Frequency Assessment Model
P&ID	Piping and instrumentation diagram/drawing
PSD	Process shut down
PZV	Process safety valve
Ptil	Petroleumstilsynet (Petroleum safety authority)
PWV	Production wing valve

Abbreviation	Description
QRA	Quantitative risk analysis
RNNP	Risikonivå i norsk petroleumsvirksomhet (Risk level in Norwegian petroleum industry)
SHLFM	Standardised hydrocarbon leak frequencies model
TN	Technical note
UKCS	United kingdom continental shelf
WO	Work order

3 Expressions

This chapter gives detailed explanations of expressions used in the main report and all technical notes.

3.1 Full bore hole

Full bore hole is used to describe holes that have the same dimension as the equipment itself. That can be caused by a rupture, but also leaks from a valve that is left fully opened or is fully opened during an operation are categorized as a full bore hole leak.

3.2 Probability density function

The probability density function for hole sizes gives the relative likelihood for a hole size to take on a given value. The probability of the hole size falling within a particular range of values is given by the integral of the density function over that range, i.e. it is given by the area under the density function between the lowest and greatest values of the range. The probability density function is nonnegative everywhere, and its integral over the entire space is equal to one.

3.3 Frequency density function

The frequency density function for hole sizes gives the frequency for a hole size to take on a given value. The frequency of the hole size falling within a particular range of values is given by the integral of the density function over that range, i.e. it is given by the area under the density function between the lowest and greatest values of the range. The frequency density function for a particular equipment type is nonnegative everywhere, and its integral over the entire space is equal to the total leak frequency for that equipment type.

3.4 Cumulative hole size probability distribution

This expression denotes the probability of a leak with hole size equal or smaller than d: P(hole size $\leq$ d). This is not widely used in the report as the modelling is done for the complementary cumulative hole size probability distribution P(hole size > d).

3.5 Cumulative hole size frequency distribution

This expression denotes the frequency of a leak with hole size equal or smaller than d: F(hole size $\leq$ d). This is not widely used in the report as the modelling is done for the complementary cumulative hole size frequency distribution F(hole size > d).

3.6 Complementary cumulative hole size probability distribution

This expression denotes the probability of a leak with hole size larger than d: P(hole size > d). This expression is for simplicity often referred to as the **hole size probability distribution**, throughout the report.

3.7 Complementary cumulative hole size frequency distribution

This expression denotes frequency of a leak with hole size larger than d F(hole size > d). This expression is throughout the report denoted F, and for simplicity it is referred to as the **hole size frequency distribution**.

Note that the complementary cumulative hole size probability distribution for an equipment type multiplied by the total leak frequency for that equipment type, gives the complementary cumulative hole size frequency distribution.

3.8 Incident data

Incident data gives information about specific events where HC-leaks have been detected.

3.9 Population data/Exposure data

Both terms "population data" and "exposure data" are used to denote the number of equipment years in the populations. In other words these expressions are used to denote the number of units (for instance pumps) multiplied with the number of years in operation.