

'Quantitative Risk Assessment for High Pressure Gas Pipelines in Europe' Q&A

Thank you to everyone who registered and joined us for our webinar entitled '*Quantitative Risk Assessment for High Pressure Gas Pipelines in Europe*'.

Our presenter, Minjian Wu, has answered your questions that were submitted during the webinar.

If you do have anything further that you would like to ask our presenters, please contact Minjian directly.



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Questions and Answers

Q: Will the risk assessment methodology also need to include pressure and pipeline route? High pressure and seismic route regions are more of a risk concern

A: Yes, that has been included in the methodology. The pipeline failure probabilities are dependent not only on failure mechanism (for example, ground movement from seismic activities) but also on pipeline parameters and any existing controls. Pipeline parameters include pressure, diameter, wall thickness and material etc.

Q: For consequence modelling, in which flow rate is to be considered, is it the peak flow rate at the start or the average flow rate over the release duration?

A: The peak flow rate is used for the modelling of any fireball and the transient flow rates for jet fire.

Q: What code/standard details should be used for ALARP?

A: The Health and Safety Executive's R2P2 – reducing risks, protecting people, and HSE RR703 for societal risk calculations.

Q: How are the underground release scenarios modelled?

A: Most pipelines are buried underground but ignition sources are usually present aboveground, so consequences are modelled in the same way as above ground, since the released gas will lift up the crater to be ignited. The release is from above ground.

Q: If you have many people living next to gas pipelines, how you can reduce the risk level to these communities?

A: The standard mitigation methods can be considered – e.g. slabbing, relay the pipeline in thick wall, bury the pipeline deeper or move the development further away from the pipeline, etc. Some of the measures will cost much more than the others (e.g. pipeline being put temporarily out of service) but those may also come with significant risk reductions. This is then down to a cost-benefit analysis.

Q: At the start of the presentation you mentioned reducing environmental risk or environmental hazards. How does a QRA deal with these environmental risks or hazards?

A: Environmental risks would be out of the scope of a standard QRA for gas pipelines as the primary goal of assessing a hazardous asset is to avoid loss of life. Also, environmental consequences are more significant with liquid pipelines, as the released contents spread on surfaces.