Natural Resources Canada / Ressources naturelles Canada

Projet d'implantation du terminal méthanier Rabaska et des infrastructures connexes

Lévis 6211-04-004

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Mme. J. Primeau
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Re : Your fax of February 21, 2007 "Project d'implantation du terminal méthanier Rabaska et des infrastructures connexes"

Madam,

Question C94 asks about the possibility of a vapour cloud becoming disconnected from the source of the leak and travelling some distance before igniting, and the effect of such a phenomenon on the inhabitants of the Ile d'Orléans or the south shore of the St. Lawrence.

In our opinion, it is highly unlikely that a flammable gas cloud could become disconnected from the source and travel further than the distances already calculated by the promoter for the lower flammable limit of a vapour cloud connected to the source (2200 m for a breach of diameter 1500 mm and a wind speed of 3 m/s, stability class "D"). The perimeter of the flammable vapour cloud is determined by a balance between the dilution of the vapour cloud as it mixes with air and is dispersed by the wind, and the rate of evaporation from the LNG pool that is the source of the cloud. The rate of evaporation is largely determined by the heat transfer between the water and the LNG floating on top of it, so will depend on the surface area of the pool. If the vapour cloud becomes cut off somehow from the pool there will be no source of natural gas and the vapour cloud would shrink. If the LNG pool were to be cut off from the leak, the pool would shrink, resulting in a lower rate of evaporation, again causing the lower flammable boundary of vapour cloud to shrink.

We, remain at your disposal to answer other questions regarding the Rabaska project where we do have the necessary expertise.

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Yours, sincerely,

c.c. Livain Michaud, Michel Boulianne (TC), Bert von Rosen