

ÉTUDE SANDIA NATIONAL LABORATORIES

Approche par zone

Table 3: Guidance for Impacts on Public Safety from LNG Breaches and Spills

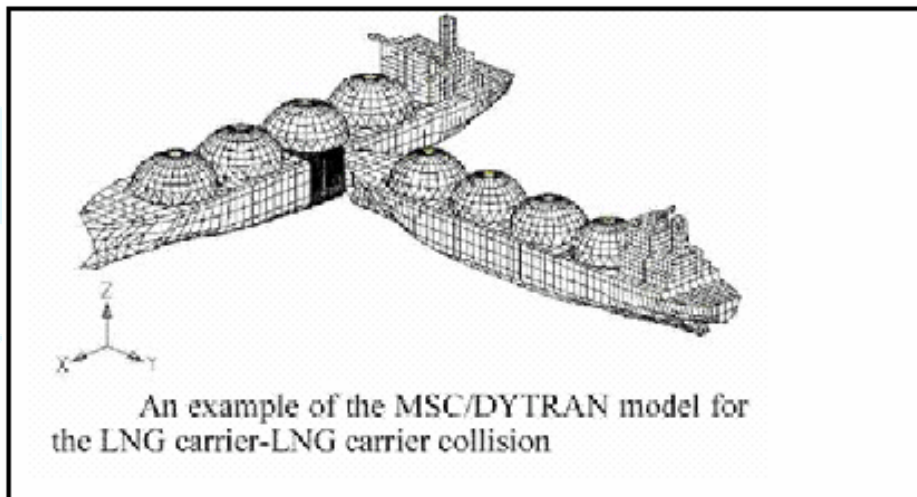
EVENT	POTENTIAL SHIP DAMAGE AND SPILL	POTENTIAL HAZARD	POTENTIAL IMPACT ON PUBLIC SAFETY*		
			High	Medium	Low
Collisions: Low speed	Minor ship damage, no spill	Minor ship damage	None	None	None
Collisions: High Speed	LNG cargo tank breach and small - medium spill	Damage to ship and small fire	~ 250 m	~ 250 – 750 m	> 750 m
Grounding: <3 m high object	Minor ship damage, no breach	Minor ship damage	None	None	None
Intentional Breach	Intentional breach and medium to large spill	Damage to ship and large fire	~ 500 m	~ 500 m – 1600 m	> 1600 m
	Intentional, large release of LNG	<ul style="list-style-type: none"> ▪ Damage to ship and large fire ▪ Vapor cloud dispersion with late ignition 	~ 500m ~ 500 m	~ 500 m – 1600 m > 1600 m	> 1600 m > 2000 m

* Distance to spill origin, varies according to site
 Low – minor injuries and minor property damage
 Medium – potential for injuries and property damage
 High – major injuries and significant damage to property



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- Étude réalisée par 23 experts à partir de :
 - Le passé et l'historique des accidents
 - Les recommandations de l'OMI
 - Les normes de conception des méthaniers
 - L'expérience opérationnelle des experts (DNV est une des principales sociétés de classification de méthaniers)
- Pas de fuite en cas de collision à 90° à 6,6 nœuds d'un méthanier par un navire équivalent



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Table 32: Estimated LNG Cargo Tank Breach Sizes for Various Scenarios

BREACH EVENT	BREACH SIZE	CARGO TANKS BREACHED
Accidental Collision with Small Vessel	none	none
Accidental Collision with Large Vessel, (90° @ 7 knots)	none	none
Accidental Collision with Large Vessel, (90° @ 12knots)	5-12m ² (effective breach: 0.5 – 1m ²)	1
Accidental Grounding	none	none
Intentional Breach	0.5 m ²	1
Intentional Breach	2 m ²	3
Intentional Breach	2-12m ²	1
Intentional Breach	5 m ²	2
Intentional Spill	Premature offloading of LNG	none

