



Comments from CERN's Safety Commission concerning:

nTOF 11 / TT2A
CRYOGENIC INSTALLATIONS

- Supply of LN2 from a 6000 liters dewar installed outside between building 559 and 506.
 - LN2 transfer line from the dewar to the magnet in TT2A.
 - The magnet will contain 200 liters of LN2.
 - Before each proton pulse, some 200 liters of LN2 from the target will be released during 30 minutes.
 - 0.7 liters of activated LN2 will be released in the TT10 tunnel at each proton pulse.
 - There will be a total of 100 proton pulses during a period of 1 month.
1. The 200 liters of LN2 (140 Nm³ in gaseous form) shall not be released in the underground. Not even in TT10 where there is ventilation. In the event of ventilation failure, there is an ODH. Risk=probability*gravity

The N2 shall be vented to the atmosphere at surface level, where no one can get hurt by cold or by ODH. The vent line shall be marked (fluid being used and person to contact in the event of questions from the fire brigade or other).

2. Concerning ODH, the 0.7 liters of activated LN2 can be released in TT10. The N2 shall not represent a risk of cold burns.
3. Please show that there will not be more than 0.7 liters of LN2 released at each proton pulse.
4. No liquid air is allowed to drop from the cryogenic installations. SC/GS will do an inspection to check that this and other points of safety have been implemented.
5. It shall be compulsory to wear portable O₂ meter with audible and visual alarm of minimum 18% of O₂ in the underground area. Potential risks are the 200 liters of LN2 in the magnet in TT2A and the 6000 liters of LN2 at the surface. The dewar of 6000 liters is connected to the magnet via a transfer line which goes through TT10 to TT2A.
6. It shall be compulsory to have an oxygen mask in the underground area, ready to be used in the event of an ODH.
7. A safety zone has to be created in the different tunnels connected to TT10 where portable O₂ meter and oxygen mask is compulsory. The zone shall be clearly marked. To be defined by nTOF 11 and SC/GS – visit the area, looking at maps and coordination with other users in the tunnel.