This is to inform you that Transport Canada's Transportation of Dangerous Goods (TDG) Directorate is conducting a peer review of research project ideas that have been gathered consequent to the TDG Research Symposium held in 2019.

The TDG Directorate has conducted an initial assessment of all of the research ideas collected and would like to conduct a peer review. A call for peer reviewers was sent to the TDG General Policy Advisory Council (GPAC) (https://www.tc.gc.ca/eng/tdg/general-policy-advisory-council.htm) and National Compliance Working Group (NCWG) (https://www.tc.gc.ca/eng/tdg/national-compliance-working-group-members.htm). The peer review process is taking place from February 14 to March 18, 2020. Anyone outside of GPAC or NCWG may request an opportunity to participate in this peer review process.

- The following will be shared with the peer reviewers:
  - Information on each of the research project ideas, including the objective of the project, background on the issue or key drivers, and possible paths forward.
  - Information on criteria used to assess each of the research project ideas, such as safety impact, urgency/timing, impact on stakeholders, impact on public, link to complementary projects, feasibility of project execution, support from industry or other external stakeholders, and potential research partnerships.

- Peer reviewers will be asked for any comments or feedback on the information provided.

- Those comments and feedback will be taken into consideration to help prioritise and select research projects to pursue.

For your reference, please find attached a list of the research project ideas to be peer-reviewed. Further information regarding any of the research project ideas is available upon request. Please contact TC.TDGResearchDevelopment-DeveloppementderechercheTMD.TC@tc.gc.ca.

TDG RESEARCH PROJECT IDEAS FOR PEER REVIEW

A. Development of requirements for a new standard for flexible fabric tanks for the aerial transport of fuels
B. Validation of upcoming new United Nations requirements for fibre-reinforced plastic (FRP) portable tanks, to consider for adoption in North America *
C. Analysis of considerations for the development of TankFax, a database of vehicle histories of highway tanks, in Canada
D. Evaluation of American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* Section XII requirements for the manufacture and continued service of highway tanks in Canada
E. Collecting data on steels used for the manufacture of highway tanks, for damage assessment purposes
F. Evaluating the applicability of damage assessment criteria for pressure tank cars towards damage assessment for general-service tank cars
G. Using fibre-optic sensing for the qualification of new materials and new designs for means of containment
H. Evaluation of CG-7 pressure-relief devices for cylinders, to consider the possible extension of the requirement for replacement/re-test within 10 years of the date of manufacture
I. Analysis of and potential uses for shredded waste from used explosives packagings
J. Development of a smart package for lithium battery transportation that indicates a warning about an issue inside the package
K. Hazard assessment of energy storage systems (ESS) being transported in enclosed vessels for marine transport
L. Safety analysis of stranded energy in a lithium-ion battery pack
M. Contribution to the development of and testing for revised United Nations (UN) classification criteria for lithium batteries
N. Analysis of the reasons for regulatory non-compliance in the transport of lithium batteries
O. Validation of recommended emergency actions for liquefied natural gas (LNG) in the Emergency Response Guidebook (ERG)
P. Review of the recommended distances for boiling-liquid expanding-vapour explosions (BLEVEs) in the Emergency Response Guidebook (ERG)
Q. Review of penetration failures in past vent-and-burn procedures, and consideration of possible solutions
R. Consideration of methods for remote placement of shaped charges in the vent-and-burn technique
S. Comprehensive review of the criteria and thresholds for emergency response assistance plans (ERAPs) in the *Transportation of Dangerous Goods (TDG) Regulations* *
T. Evaluation of any increased risks resulting from greater amounts of hydrogen being transported to hydrogen-vehicle fuelling stations

U. Determining the status of the hydrogen storage system after a vehicle fire, so that the damaged hydrogen storage system can be transported safely using the appropriate post-fire handling measures

V. Development of a geographic-information-system (GIS) based risk assessment methodology for the transport of dangerous goods by road

W. Consideration of human factors in TDG training requirements

* *Immediate research needs have been identified related to these project ideas, and preliminary work and considerations for these projects have been initiated. The TDG Directorate would still like any comments or feedback from peer reviewers, to take into consideration regarding how this work may proceed.*