Opening Remarks for Tristan Brown
Deputy Administrator
Pipeline and Hazardous Materials Safety Administration
LNG R&D Forum Tuesday, November 15, 2022

- Good morning. And, welcome to PHMSA's Liquefied Natural Gas (LNG) Research and Development (R&D) Forum. We are grateful to have over 200 registrants, with representatives from public interest groups, industry, academia, intergovernmental partners, and the public. We are looking forward to hearing from and collaborating with all of you over the next two days as we seek input on how best to invest in LNG research and development.

- To begin, I'd like to discuss the work of my agency, the Pipeline and Hazardous Materials Safety Administration (or "PHMSA"). We oversee the safe transport of hazardous materials—through pipelines and other modes of transportation—including planes, trains, trucks, vessels, and automobiles.

- In that vein, we oversee the safe design, operation, and maintenance of our Nation's nearly 3.3 million miles of oil, gas, and other hazardous material pipelines to ensure that the American public remains safe. Nearly 1 in 10 goods that are transported in the U.S.—everything from nuclear waste to lithium-ion batteries, and explosives used in excavation, mining, and energy production —are hazardous goods, meaning my office is always busy at work thinking of ways we can better serve you. We also maintain global influence, as Chair of the United Nations Subcommittee on the Transport of Dangerous Goods.

- The transportation of energy products that PHMSA regulates is expanding in complexity and scope due, in part, to the increase of LNG exports over the last decade. According to the U.S. Energy Information Administration (EIA), "U.S. LNG export capacity increased from less than 1 billion cubic feet per day (Bcf/d) in 2015 to 10.78 Bcf/d at the end of 2020. In 2021, U.S. LNG exports reached a record high of about 3,561 Bcf to 45 countries, and LNG exports accounted for 54% of total U.S. natural gas exports."

- We collaborate with federal, state, and local agencies involved in the review of the design, construction, operation, maintenance, and inspection of LNG facilities. PHMSA also maintains coalitions with industry partners by participating in standard setting committees to provide comment on practices and technologies; educating industry, the public, and stakeholders about PHMSA policies, regulations, and research activities; and by addressing R&D safety gaps related to LNG alongside industry and other stakeholders.

- In the age of data that we're living in, we can see that achieving a sufficient level of safety, environmental protection, and efficiency, requires adequate investments to identify and mitigate risks to energy production and transportation operations This increase in regulatory safety is especially important to prevent failures.

- Because energy products and other hazardous materials are a necessity to our economy, it's essential that research projects promote safety, protect the environment, and ensure our transportation systems' efficient and reliable performance. PHMSA is charged with regulating the safe transportation of these products, even as the nation transitions to newer, more environmentally friendly forms of energy.

- As you may know, PHMSA's Pipeline Safety Research Program works with academia, other government agencies, and industry to sponsor R&D projects focused on improving safety, reducing environmental impact, and enhancing reliability. Similar to everything we do, our R&D program is focused on implementing the Administration's priorities through investments that promote safety and environmental protection, climate change mitigation measures, and using transportation infrastructure as an engine for equity.

- One such example is the use two software models for calculating Liquefied Natural Gas (LNG) flammable vapor dispersion exclusion zones, Process Hazard Analysis Software Tool (Phast) and Flame Acceleration Simulator (FLACS). PHMSA's regulations currently do not require approved software models for other hazards, such as vapor cloud explosions (VCE). However, NFPA 59A (2001 edition) incorporated by reference in PHMSA's regulations

require consideration of other factors applicable to the specific site that have a bearing on the safety of plant personnel and the surrounding public. Although this provision does not provide specific requirements on the software models used to calculate these hazards, operators utilize these two models to demonstrate compliance with this provision. PHMSA continues to evaluate and vet other software that could potentially be approved for the specific application to model VCE's. It is PHMSA's commitment to safety that drives us to seek creative, compliant solutions to complex situations.

- This forum provides an opportunity for stakeholders to review the LNG research PHMSA has conducted in recent years and help to identify research gaps that may exist, specifically in areas of siting, design and construction, fire protection, and operations and maintenance. The gaps identified here will inform future PHMSA research efforts aimed at reducing safety risks, mitigating climate change impacts, and providing economic benefits to our nation.

- In addition to sparking what we hope is a lively exchange of ideas, we are also hopeful this forum will help inform our LNG-related research and development agenda for the next two years.

- Some of you may be aware that PHMSA is currently developing a report titled "National Center of Excellence for Liquefied Natural Gas Safety Report to Congress," as required by Section 111 of the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (PIPES Act of 2020). The report examines how establishing an LNG Center of Excellence (or "Center") may enhance safety and reduce environmental impacts through regulatory improvements, serve as a repository of information, and facilitate collaboration among stakeholders. Additionally, the report identifies possible locations for the Center and provides a cost analysis of the resources needed to establish and carry out the Center's functions. We anticipate the report will be sent to Congress shortly.

- PHMSA is promulgating an LNG regulatory update – the first ever since 2000. The updates will address the dynamic changes in the LNG operations from: import to export of LNG; updates from the National Fire Protection

Association standard 59A; congressional mandates; and other safety improvements. I'm sure you'll be hearing more about this effort in the coming months, but you can always follow the status of our rulemaking efforts by using reginfo.gov.

- As an update, I am happy to report that the root cause failure analysis on the LNG incident at Freeport LNG's Texas facility will be posted to the PHMSA website. PHMSA looks forward to discussing these findings with stakeholders and applying lessons learned from this incident.

- Thank you again for joining us, and in particular, I want to extend PHMSA's appreciation to the presenters today and tomorrow. We look forward to hearing your input and continuing to work with you all on our collective goals of enhancing LNG safety and the protection of our environment.