



## Svetlana Kuznetcova

*PhD student, Department of oil and gas transportation,  
storage and oil and gas field equipment*

*Higher school of power engineering, oil and gas*

*Northern Arctic Federal University named after M.V. Lomonosov*

*s.kuznetcova@narfu.ru*

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My field of research is in emergency management generally and in environmental risk assessment and management of oil spills in the Arctic in particular. The importance of increasing emergency preparedness for unwanted incidents is emphasized both by commercial actors and governments. Actors involved in activities such as hydrocarbon drilling, transportation and cargo transport have to focus on safety and risk assessments.

My PhD thesis is entitled “Risk assessment and management of hydrocarbon transportation in the Barents Sea”. There is no complete study currently available of relative risks and impacts associated with oil transportation that systematically considers all the factors for each mode of transport – economic consequences, incident rates, fatality rates, long-term environmental damages, etc. I believe that a study of relative risks is necessary and should include risk assessments using scenario-based research and focusing on the distinctive risks and impacts for each mode of transport. Transportation of oil and gas on the sea characterizes challenges from a safety viewpoint. The marine transportation of these scarce natural riches in turbulent environments involves risks, which may lead to many losses: wasting oil and gas, injuries to people, damaging ships and properties, and damaging environment. These represent challenges to the emergency preparedness system. In particular, the Arctic may experience turbulent weather, especially in winter. The consequences of accidents may be severe owing to long distances, cold climate and limited local resources. The main purpose of my thesis is to evaluate the risks, hazards, and accidents during transportation of oil and gas in Arctic waters, to ensure a proper level of emergency response and to develop improved emergency management. Hence, a better understanding of these risks and hazards can contribute to decrease of addressed losses and enhance emergency management.

Risk management has intrigued me since my master’s studies when I examined risk management of oil spills in the Arctic. In my master’s thesis, I tried to assess the risk probability of oil spills in the Barents and Kara Seas, worked out probable oil spill scenarios and provided risk matrixes to persuade decision-makers by visualizing the results for the first time. This formed a synthesis of what kind of information is required for the risk management under oil spill threat.

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My master's thesis was based in particular on the reflections of the international project Marpart "Maritime preparedness and International Partnership in the High North". The Marpart-consortium studies Arctic maritime activity patterns and the potential risks of maritime traffic in High North environments as a platform for understanding organization and management challenges related to maritime preparedness. The Marpart team included researchers from Norway, Sweden, Iceland, Denmark, and Russia under the leadership of Nord University. Marpart investigated how joint operations are organized and coordinated in different parts of the emergency response chain. Project researchers look into tactical level on-scene coordination, operational level command systems, and strategic level management structures. I got involved in the Marpart research activities in 2014 and became a thematic leader in Russia within the Marpart project. My research work has also been related to my job activities as I am employed at the Rescue service of the Arkhangelsk region.

I used qualitative analysis and risk matrixes based on an expert assessment as accidents are rare in the Atlantic Arctic and there are limited statistics available. The Marpart researchers referred to my analysis in the paper "Arctic Shipping and Risks: Emergency Categories and Response Capacities". In this study, the frequency level of different types of incidents with different types of vessels and the severity of consequences for human beings and the environment were shown under critical factors such as harsh weather, ice conditions, remoteness and vulnerability of nature in the Arctic. A certain element of qualitative expert evaluations on specific vessels, risk areas or defined situations of hazard and accident served as the basis for the risk matrixes. The estimation of consequences was based on case studies of the effects of real accidents in different parts of the world illuminating accidents with different types of vessels. The analyses were also based on results from exercises showing the capabilities of mitigating the negative effects of accidents in Arctic waters.

The coordination of the broad range of actors included in a maritime incident both in the air, at sea and ashore with several institutions and management levels included for large scale emergencies was considered in the paper "Emergency Management in Maritime Mass Rescue Operations: The Case of the High Arctic"

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in the book *Sustainable Shipping in a Changing Arctic* published by Springer. We described the incorporation of host nation support from neighboring countries and illustrated the organizational structure of such operations and the coordinating roles at different levels. The paper reflections were built upon the experiences from the accident of the cruise ship “Maxim Gorkiy” in the ice South-West of Svalbard.

As a professional involved in emergency preparedness, I can confirm that improved risk management provides a critical first step in protecting the Arctic given the extreme conditions of the region, the increased volume of shipping traffic, and the continued and growing presence of oil and gas extraction and transportation activities. As a researcher, I am an enthusiast advocating for correlation with best practices and innovations related to emergency management that the academic world can ensure.