

EPPR

**Emergency Prevention,
Preparedness and Response**

**Emergency, Preparedness, Prevention, Response
EPPR Working Group**

Report to the SAO Meeting

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Tórshavn, Faroe Islands

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1. Introduction

The mandate of the Emergency Prevention, Preparedness and Response Working Group (EPPR) is to deal with the prevention, preparedness and response to environmental emergencies in the Arctic. Members of the Working Group exchange information on best practices and conduct projects to include development of guidance and risk assessment methodologies, response exercises, and training. The EPPR Work Group mandate is refined biennially through Ministerial Declarations and is further shaped by guidance from Senior Arctic Officials. The goal of the EPPR Working Group is to contribute to the protection of the Arctic environment from the threat or impact that may result from an accidental release of pollutants or radionuclides. In addition, the Working Group considers questions related to the consequences of natural disasters.

The EPPR Working Group is an expert forum designed to:

- Plan and prepare for response to accidents;
- Develop strategies and tasks to prevent accidents;
- Enhance best practices; and
- Focus on the environmental implications of emergencies involving oil, hazardous and noxious substances (HNS), radiation, and natural disasters in the Arctic.

Mrs. Ann Heinrich (USA) is chair of the work group through the 2011 Ministerial meeting and Mr. Ole Kristian Bjerkemo (Norway) is vice-chair.

2. EPPR Working Group Activities

EPPR Meetings

EPPR's annual meeting was hosted by Emercom in Vorkuta, Russian Federation on June 16 – 18, 2010. This report reflects discussions and decisions made at the June meeting and subsequent activities.

The fall 2010 EPPR meeting will take place meeting in Washington, D.C. on November 9 -10, 2010. Among other activities, EPPR will work on updating the EPPR Analysis of Agreements and Risk Analysis documents with the aim of approving the documents at the meeting and developing a path forward to submit the documents to the SAOs for clearance in time to be submitted to the Ministerial meeting. EPPR will also review a final draft of the “Behavior of oil and other hazardous substances in Arctic waters” (BoHaSA) report.

SAR Task Force Update

Ambassador Anton Vasiliev reported that the SAR Task Force was working on the Arctic Council's first pan-Arctic, multi-lateral binding instrument and he credited EPPR for originating this idea. The Russian Federation and the United States lead the Task Force which has met 3 times and has worked on draft language proposed by the Russian Federation. The Russian Federation has proposed that the SAR agreement be a legally binding agreement. If the SAR Task Force succeeds, this effort will yield the first legally binding multilateral instrument in the history of the Arctic Council. All 8 Arctic countries are participating and working on the instrument by consensus. The next meeting of the Task Force will be in December, 2010 in Finland. The goal is to have an instrument ready for signature for the 2011 Arctic Council Ministerial meeting in Greenland. Ambassador Vasiliev emphasized that this agreement was not an end in and of itself, but that it is a starting point that allows for the most efficient use of response forces, and will help us understand the complexity of the task we face in Arctic SAR. When asked whether EPPR would be involved in future SAR activities, or if a special group would be established in order to provide follow up on SAR to the Arctic Council, Ambassador Vasiliev responded that he expected EPPR to be involved in SAR work and activities. Although he could not disclose the substance of the SAR agreement, he emphasized the need for EPPR to consider future information exchange on SAR. He stated that this agreement is a serious achievement and that its execution would not remove SAR activities from EPPR.

Strategic Plan

EPPR updated its Strategic Plan of Action to position EPPR to respond more effectively to Ministerial Declarations and to better facilitate synergies between EPPR and the ongoing work of other Work Groups. These changes reinvigorate the plan and make it a more effective tool for the Working Group. One specific change in the plan is to separate the work plan from the Strategic Plan, allowing more flexibility in updating the work plan. This change required a modification to EPPR's Operating Guidelines. At the meeting in Ilulissat, Greenland SAOs accepted EPPR's Strategic Plan of Action and the change to the Operating Guidelines. The Strategic Plan and the Operating Guidelines are available on EPPR's web page.

Operating Guidelines

The new Strategic Plan of Action no longer contains the Work Plan for the Working Group. This change was needed for several reasons. First, conceptually the work plan is the tool that captures the implementation of the Strategy but is not part of the strategy itself. Second, the work plan needs to be updated on a more frequent basis to reflect implementation of the strategy, which may include identification of new projects, revision of information on ongoing projects, and identification of changes within projects regarding lead and participant countries, for example. The work plan will be reviewed

and revised if necessary twice a year in conjunction with the EPPR meetings. The work plan document now will be maintained and revised as part of the EPPR meeting reports.

Country Reports: Canada and Russia

All countries reported on national activities of interest to EPPR. Both Canada and Russia provided EPPR with important new information regarding their country's programs in emergency preparedness.

Canada

Currently there are no drilling applications before the regulator, the National Energy Board, and none are expected until 2014. In anticipation of future drilling in the Beaufort Sea, the Board is presently conducting a review of Arctic safety and environmental offshore drilling requirements. Transport Canada presented brochures on the Dash-7 Arctic Surveillance airplane that has been used for near-time reporting and on the Dash-8 surveillance aircraft which was currently assisting the United States with the Gulf of Mexico Deep Water Horizon oil spill. Canada credits the deployment of the Dash-7 with helping to reduce the number of spills from shipping vessels. The Canadian Coast Guard reported that it was collaborating with the United States on two exercises in the North. The first exercise took place in March 2010, and that the final report from this exercise will be presented at the November EPPR meeting. The second exercise will be held in Resolute later this year and it will be a whole-of-government exercise held in conjunction with Defense Canada's military logistics support exercise. Another activity pertinent to EPPR is the distribution of community-sized kits with equipment to improve community response capacity to more frequent, smaller-scale spills. Lastly, Environment Canada will begin an effort to conduct shoreline assessments and data collection using satellite imagery. This data collection and assessment will first be conducted in Resolute (in conjunction with the exercise which will take place there), then in Beaufort and the McKenzie River Delta among other locations. The Canadian Head of Delegation invited interested members to save the dates of November 30- December 2, 2010 for the Canada-United States joint Northern Oil and Gas Research Forum to be held in Calgary, and requested contributions for themes, ideas, and speakers for the forum be sent to him for inclusion.

Mr. Frank Pokiak from the Inuvialuit Game Council discussed the importance of first responders in communities. He stated that in relation to oil and gas activities near the Beaufort Sea and other locations it is a commonly held view that communities are supposed to be the first responders. However, in his experience, no one is trained to be a first responder. He made the point that unless there is training there should be no drilling in the Arctic. Indigenous communities rely on this working group to make sure these communities are protected in some way. With growing activity and interest in the Arctic, Mr. Pokiak is concerned about everyone that lives near and depends on the ocean for life and hopes we learn from what is happening in the United States. A lot of

questions are concerns that have existed since the beginning and have not been answered.

Russia

Mr. Alexander Chupriyan, EMERCOM Deputy Minister, gave an overview of the Russian Federation's Arctic Safety Systems. Beginning with a statistical review of the Russian Arctic, its resources, and the contributions the region makes to the Russian Federation's economy, the Deputy Minister provided an assessment of the Arctic's importance. The Arctic zone of the Russian Federation has an area of more than 9 million square kilometers (4.9 million km²- main land, 4.0 million km² - sea, 0.2 km² - islands) and is home to about 1.5 million people, representing 1% of the population of the Russian Federation. Although the Arctic region is characterized by extreme climate conditions, the Arctic zone of the Russian Federation creates more than 12% of the Russian Federation's GDP and provides about 25% of Russia's exports. Shifting to the Russian Arctic the center of gravity for oil and gas production and for the extraction of other minerals will inevitably lead to an increase in human impacts on the ecology and population of the northern areas. Such a shift will expose greater numbers of people to the natural hazards present in the Arctic, and subject the region to greater technological risks.

Mr. Chupriyan acknowledged that global warming is creating new threats to the security of the population and territory of the Russian North, particularly in connection with the retreat of the permafrost zone. Global climate change and increasing human impact on northern ecological systems will lead to the rise of the dangers and threats in northern territories, among which are: an increase in the frequency and magnitude of floods, an increase in the number and strength of hurricanes and tornadoes, the breakout of massive forest fires and a fire-danger season of increased duration in most of the northern territories. The Deputy Minister also pointed out that the accelerated melting of snow in the mountains, glaciers, and polar ice may lead to flooding of large coastal areas and destruction of seashore areas. This in turn can lead to a breach of the infrastructure of a large number of settlements. Degradation and melting of permafrost will result in hazards such as landslides on thawing slopes, surface subsidence due to soil compaction, and weakening of the foundations of buildings and structures. In addition to these natural hazards, the development of mining and processing industries - notably mining - and the transport and processing of hydrocarbons may lead to an increase in the frequency of technological and environmental emergencies arising first from fire, then explosions and oil spills. Potential radiation-related dangers may arise in connection with flooding in the area of the Barents and Kara seas which have experienced the increase of radioactive waste stemming from nuclear weapons testing at Novaya Zemlya and the operation of the Kola and Bilibino nuclear power plants during the last 50-60 years of last century.

Deputy Minister Chupriyan noted that the Russian Emergency Ministry has taken measures to help mitigate the possible effects of radiation emergency on the ecological system by continuing to inspect solid radioactive waste burial sites. In addition, Emercom has organized and carried out exercises at nuclear power plants and has

taken measures to protect the population in the initial period following severe accident at nuclear power plants in the worst weather conditions.

The Northern Sea Route is an important channel and a vital area for the northern and Arctic regions of Russia. It is a key link to establishing commercial use of this international sea transport route. The Northern Sea Route is the shortest way for European countries and Russia to reach booming markets in the Asia-Pacific region. However, shipping in arctic conditions increases the potential for emergencies, with the potential of not only death, but also dangerous spills of petroleum products. After assessing the hazards and risks of emergencies in connection with the industrial development of the region, the possible consequences of global warming, the capabilities of the State system of prevention and mitigation of emergency situations, the location and distribution of populations in the Arctic Regions, Russian emergency authorities concluded that there is a need to create a modern safety system for the northern territories that ensures the maximum reduction of possible risks to the population from natural and technological disasters by:

- Establishing a system for monitoring and predicting the occurrence and the dynamics of hazards created by geophysical, geological, meteorological, hydrological, ecological and socio-economic phenomena and processes;
- The establishment of warning systems, using modern information technology and communications, to inform the population of the northern territories about an impending emergency;
- The establishment of the emergency situation response forces - including mobile units - in each of the regions of the Russian Federation to address the emergence of new threats to the northern territories and the specific conditions in each of the territories, in order to increase the number of response forces available for emergencies, and to improve response force distribution and composition as well as their equipment;
- Organizing and alerting rescue forces in the sea lanes in order to conduct search and rescue operations;
- Creation of storage bases for rescue and firefighting equipment placed in key locations in northern regions to increase the speed of rescue operations;
- Refining techniques and methods of using the State emergency situations response forces in the prevention and elimination of possible emergency situations in the northern territories;
- Developing special technologies for rescue and special rescue and firefighting equipment and devices that can operate in arctic conditions.

The Deputy Minister mentioned that the Russian Ministry of Regional Development has prepared a draft Strategy for the Development of the Arctic zone of the Russian Federation and national security in 2020. This draft strategy includes proposals from the Russian Ministry of Emergency with objectives to improve the protection of critical facilities and enhance rescue operations and the readiness of government authorities. Emercom has prepared cost calculations and justifications for the establishment of specialized rescue centers.

The purpose of establishing a system of specialized rescue centers is relevant to prevention, preparedness and emergency response because its purpose is to provide comprehensive operational assistance to persons in distress in the polar regions of the Russian Federation, along the Northern Sea Route, and in the adjacent territories of foreign states in accordance with international agreements.

Mr. Chupriyan explained that given the extent of territory, natural and climatic conditions of the region and the level of its development, the centers would house mobile operational capabilities to respond to emergencies, based in the most developed towns in the region which possess the most developed transport and telecommunications infrastructure, and considerable human resources. Positioning of the rescue centers takes into account the locations where emergencies are most likely, and the speed of rescue and emergency response. In total, the establishment of 10 rescue centers has been proposed in: Murmansk, Arkhangelsk, Naryan-Mar, Salekhard, Dudinka, Tiksi, Pevek, Uelen, Anadyr, and Ust-Kamchatsky. Furthermore, rescue centers should ensure a state of constant preparedness and emergency response to any emergency situation in the region. The federal budget will provide for the establishment of rescue centers that serve as regional control centers in complex crisis situations occurring in the Nenets Autonomous District, in the Taimyr municipal district of the Krasnoyarsk Krai, and the Khanty-Mansi Autonomous District. The establishment of these centers will allow monitoring of critical facilities and supplies; collecting, compiling, analyzing and storing of information on the threat or emergency situation; sending information to subscribers using any type of communication, as well as calculating forces and resources needed for rescue, and warning and informing the public about emergencies.

In order to maintain the readiness of State response forces to respond to emergencies in the Arctic, the Russian Emergency Ministry conducts training drills and international exercises. In 2008, an international exercise was held and was observed by representatives from several countries (Norway, Sweden, Finland, USA, and Canada). This exercise demonstrated the capabilities for disaster recovery of by Emercom of Russia and LUKOIL in the Varandey oil-loading terminal and also tested the interaction of response forces at the regional level, as well as in the production systems and ecological monitoring terminals.

The Russian Federation's priorities in the Arctic are to increase efforts among the eight Arctic States by creating a unified regional system for search and rescue, to prevent and prepare for man-made disasters, and to increase the coordination of rescue forces. Thus, to ensure integrated security in the Arctic region, the Russian Ministry of Emergency has made working on the following tasks a priority:

- Creating new and improving existing emergency centers;
- Developing and improving monitoring technologies to detect possible natural and manmade disasters;
- Improving cold weather rescue and emergency response technology;
- Creating and developing rescue tools and equipment designed to operate in low temperature conditions.

Mr. Chupriayn's thorough presentation was welcomed by EPPR. The thoughtful discussion set the stage for EPPR's work in addressing ongoing projects and framing discussions for future activities.

New Projects

Two new projects were introduced at the last meeting that address areas of concern raised in the 2009 Arctic Marine Shipping Assessment and the Deputy Ministers Meeting held in April 2010. These new undertakings will inform the Arctic Council on emergency response capacity for oil-related and shipping-related incidents. Please see Annex A for complete project details to include estimated timelines and milestones.

The "Arctic Region Oil Spill Response Resource and Logistics Guide" will survey the oil spill response resources and capabilities of Arctic States to respond to oil spills in Arctic waters, both near coastlines and on the high seas. Survey information will be used to develop map products which display the location of and describe available resources for oil spill response in the Arctic region. Since much of the equipment is not cached locally, the project will also note the location of airports and docking facilities that could be used in event of a spill noting their capabilities.

A supplemental Reference Guide will provide additional details about each location, the type of oil spill equipment available in the vicinity, and the process for requesting the equipment in an emergency situation. Wherever possible, the Reference Guide will include equipment specifications, and indicate compatibility with that of neighboring Arctic countries.

This project will include a human dimension with a goal to work with Arctic communities to assemble information on available community assets and response resources. The map and reference products will be published electronically and able to be reproduced in hard copy. The products can be updated by the participating country's designated representative as conditions or information change. The proposal estimates this to be a 3-year long project. Canada and the United States will conduct a joint pilot program to assess regional capabilities and will report back to EPPR.

The "Arctic Automated Mutual Assistance Vessel Rescue Network" (AAMverNet) project will encourage Arctic nations to have their nationally flagged vessels enroll and report to the AMVER system, and will encourage Arctic nations to share vessel position information with the AMVER system. In the first phase of the project the U.S. lead will survey Arctic nations to determine regional methods of vessel tracking and the incidence of AMVER use in search and rescue cases in the Arctic region. The project will be broken down into several phases and could become an ongoing program once it is fully implemented. Phase I will survey current vessel tracking and search and rescue capabilities of Arctic nations. Phase II will devise, test, and evaluate a vessel position information sharing network between Arctic region ship reporting systems and Amver. Participation in the vessel position information sharing network will be free of to Arctic

countries. Phase III would involve full implementation of the information sharing network if evaluation determines the project should continue indefinitely.

The United States and the Russian Federation have started discussing the possibility of collaborating in this area and will report back to EPPR with the outcome of the survey and information sharing efforts.

Activities Addressing Oil, Gas and HNS

Co-operation on oil spill and HNS response in the Arctic

In 2009 EPPR focused on developing projects related to co-operation on oil spill and HNS response in the Arctic. The primary aim of one project area under discussion is to address the adequacy of existing regional agreements in relation to the future challenges in the Arctic based on current and future oil and gas and maritime activities, following up on a report previously written by EPPR.

In the Inuvik Declaration of 1996, EPPR was charged with analyzing the adequacy and effectiveness of existing international agreements and other arrangements in the Arctic in the areas of emergency preparedness and response to environmental emergencies. In August 2000 EPPR issued the *Analysis of the Adequacy and Effectiveness of Existing Arrangements and Agreements (Gap Analysis)*, identifying risks and analyzing the potential threats and impacts of discharges from activities with the potential for trans-boundary impact, as well as the existing agreements relating to human activities posing high risk in the Arctic.

Among the risks considered in the *2000 Analysis of Agreements and Arrangements* and the associated *Environmental Risk Analysis of Arctic Activities* (1998) were oil terminals, major oil or hazardous materials transportation routes, exploitation of oil and other mineral resources, hazardous materials waste sites, as well as nuclear and radioactive waste sites and activities. EPPR found that “international agreements and arrangements currently in force, agreed to, or under consideration appear to address the present needs for trans-Arctic cooperation in these fields.”

In April of 2009, at the request of Arctic Council Ministers, PAME identified follow-on activities and recommendations based on the findings of the Arctic Marine Shipping Assessment (AMSA) Report, two of which were referred specifically to EPPR:

II. Protecting People and the Environment – F. Oil Spill Prevention: Enhance the mutual cooperation in the field of oil spill prevention and, in collaboration with industry, support research and technology transfer to prevent release of oil into Arctic waters for environmental protection.

III. Building the Arctic Marine Infrastructure – C. Circumpolar Environmental Response Capacity: Develop circumpolar environmental pollution response capabilities that are

*critical to protecting the unique Arctic ecosystem. This can be accomplished **for example** through circumpolar cooperation and agreement(s), as well as regional bilateral capacity agreements.* (Emphasis provided)

The activities described below reflect the consideration that EPPR is giving to address Recommendation III (C).

Activities

The first activity to consider Recommendation III (C) was a Gap Analysis Workshop conducted during the November 2009 EPPR meeting. The Gap Analysis Workshop originated from discussions that had taken place in anticipation of the issuance of the AMSA Report, and the recommendations that would fall under EPPR's mandate, during EPPR's annual meeting in March, 2009 in Las Vegas, U.S.A. At the March meeting, participants noted that the recommendations are an important area of responsibility for EPPR since any major spill in the Arctic could affect many countries and require a large, coordinated response.

In addition to the AMSA recommendations, the Gap Analysis Workshop also considered recommendations from the AMAP Oil and Gas Assessment (2007). Discussions in this workshop focused on the current status of response capabilities, existing agreements and arrangements, identified gaps, and planned next steps for EPPR.

Workshop participants noted that there are existing bilateral and multilateral agreements in force, such as the Bonn Agreement for the North Sea, HELCOM for the Baltic Sea, and the Copenhagen Agreement between Nordic States. However, the individual agreements are separate instruments and are not harmonized. There is no common understanding of the geographic, functional, and administrative boundaries of each agreement as they relate to each other. The Workshop examined the applicability of important agreements, e.g. Bonn Agreement and Canadian Joint Contingency Plans.

Discussions covered many issues including potential operational gaps in response to spills in the Arctic; focusing on reducing risks and enhancing preparedness as a strategy for managing risks; the need of Arctic nations to review response regimes; the need to educate on oil spill response in the north and to increase industry participation in the development of response capabilities in the north. Specific initiatives were provided as examples, including the Canadian Coast Guard's strategy to place caches of equipment in select northern villages and to train local communities to be first responders.

Participants recognized the importance of distinguishing between gaps in operational spill response capacity, potential gaps in the coverage of agreements or other arrangements that cover bilateral or multilateral response to oil spills, and the need to address both. Participants identified a number of suggestions for dealing with the AMSA recommendations including:

a) Developing a common platform of knowledge and information on organizational structures and capabilities of Arctic country response systems which could be

disseminated through a series of papers outlining existing resources; incident command structure; oil response regulations and practices;

b) Establishing joint information centers;

c) Revisiting the previous gap analysis to see if existing agreements still provide sufficient coverage;

d) Determining whether oil spill equipment in use is compatible with a different country's equipment.

Because of the complexity of the subject and the need to further consider appropriate measures in response to the issues raised by the AMSA recommendation, a correspondence group was formed under Norway's leadership to:

1) Consider the *2000 Analysis of Agreements and Arrangements* and the associated *Environmental Risk Analysis of Arctic Activities* (1998) in light of the need to update the documents;

2) Consider international regimes related to oil and HNS spills in international waters;

3) Review the AMSA recommendations and the report from the *Envisioning Disasters and Framing Solutions* workshop held in March 2008; and

4) Propose a way forward at the next meeting.

The AMSA Recommendations Correspondence Group (the Group), comprised of at least one representative from each of the Arctic countries, conducted four teleconferences in the first half of 2010 and recommended that EPPR revise its *Analysis of the Adequacy and Effectiveness of Existing Arrangements and Agreements* (2000) (the *Gap Analysis*). Update of the *Gap Analysis* serves as the first EPPR project in response to the AMSA recommendations, and was adopted at EPPR's June 2010 meeting with the goal of project completion in time for the 2011 Ministerial meeting. The Group also recommended that EPPR update the *Environmental Risk Analysis of Arctic Activities* (1998) and the accompanying *Risk Analysis Matrix*, last updated in the year 2000. The need to revise the *Environmental Risk Analysis of Arctic Activities* (1998) was taken for decision at the June EPPR meeting and the recommendation was approved.

It was noted that Arctic Council had not issued EPPR's mandate on natural disasters at the time the original document was developed, but that it should now be included in the update. Participants favored adding the natural disaster dimension to make the report more thorough and address concerns of Arctic inhabitants.

The revision of the *Analysis of the Adequacy and Effectiveness of Existing Arrangements and Agreements* the *Environmental Risk Analysis of Arctic Activities* (1998) and the accompanying *Risk Analysis Matrix* are being drafted by a team under the lead of the University of Alaska. The documents will be circulated prior to the November 2010 EPPR meeting for comments with the intention of conducting final discussions and finalizing the documents at the November meeting. The updated

documents will be submitted to SAOs for approval and are intended to be delivered to Ministers in May, 2011.

Behavior of oil and other hazardous substances in Arctic waters (BoHaSa)

Norway developed the BoHaSa project in response to a request in the Salekhard Declaration to synthesize knowledge and expertise on the behavior of oil and other hazardous substances in Arctic waters and to promote the development and use of technologies and working methods that improve the capability to respond to accidents. The objective of the BoHaSa Project is identical to the mandate on the Salekhard Declaration.

The project was initiated in 2009 and it is anticipated the final report will be delivered to the 2011 Ministerial meeting. The BoHaSa project has links to the work on the *Joint Industry Project, Oil in Ice*. The Project Plan includes a workshop with industry that will be scheduled at a later date. A draft report on the behavior of hazardous noxious substances in Arctic waters has been completed and the analysis of the behavior of oil will be completed during 2010.

The BoHaSa Project analyzes how HNS properties (e.g., physical state; density; solubility; vapor pressure) will behave when exposed to temperatures prevalent in the Arctic and the associated implications and impacts on the response to spills involving HNS.

The BoHaSa Project has already yielded two conclusions:

- 1) that more information is needed about the amount and type of HNS traffic in the Arctic so that trends can be developed; and
- 2) that the greatest risk to the Arctic comes not from traffic originating or ending in the Arctic region, but from shipments that are simply passing through Arctic waters.

Transshipments through Arctic waters are of particular concern because ships that are simply passing through are not obligated to report the nature of their cargo to any of the countries where they do not make a stop.

The BoHaSa report will be submitted to the Ministerial meeting in April, 2011. A follow up workshop with the Oil Industry will be planned in conjunction with the project.

Automated Questionnaire for Assessing Spill Response Preparedness

A software program entitled “Automated Questionnaire for Assessing Spill Response Preparedness” was posted to the website for evaluation by EPPR members. EPPR is working to determine if there is usefulness in expanding this product for international use.

The Automated Questionnaire is a product designed by the U.S. Coast Guard as a tool for surveying emergency response capabilities in order to determine levels of preparedness. The purpose of developing a diagnostic survey is to create a standard series of questions which provide specific information which is in turn evaluated to determine the level of preparedness. The response to such a system would be available to planners and responders for use at the local, regional, and national levels. EPPR is evaluating the program to determine if it would be useful and feasible to expand the database to include metrics and questions based on international standards or standards from other governments, thus adapting the database to make this a tool that is available for use by the international community. Both the Automated Questionnaire and the documentation containing the rationale for each question in the database are available on EPPR’s web site.

Activities Addressing Oil and Gas and Radioactivity

Development of Safety Systems in Implementation of Economic and Infrastructural Projects

The Russian Federation leads the activities conducted under the Development of Safety Systems in Implementation of Economic and Infrastructural Projects. The significant activity under the project was the conduct of the international exercise “Barents Rescue 2009” which was held in the Murmansk region of Russia from September 8-10, 2009. Barents Rescue 2009 was the first large-scale international exercise to have been implemented in the Arctic under existing cooperation between Arctic countries in Barents region. In total, 384 people took part in the exercise, including search and rescue crews, fire teams, police teams, engineer teams, aircraft and helicopter crews. In addition, 47 units of equipment, including fire boats, aircrafts, and helicopters from the Russian Federation were mobilized. Russia, Finland, Norway and Sweden took part in the exercise.

The objectives of “The Barents Rescue 2009” was to test the operational utility of existing cooperation, to improve information exchanges, to test the level of coordination of activities that are required, and to learn from the practical experiences of coordination and rescue services in the Barents region and how these can be used in cases of emergency. Lessons learned from the exercise will be reviewed in EPPR for potential next steps.

Arctic Rescue

Led by the Russian Federation, the EPPR project Arctic Rescue continued with a joint training event. In April 2010 the Russian Emergency Ministry and the Border Service of Russia participated in joint training at the base of the Border Guard Service Nagurskoe of Franz Josef Land. The training focused on coordinating activities during search and rescue operations. The outcomes of the training will provide important input into developing EPPR exercises and plans. Next steps will be discussed at the November EPPR meeting.

Activities addressing Radiation

Source Control

In the first phases of the source control project, ongoing since 2000, a Risk Assessment Methodology was developed and applied to both radiation and chemical hazardous industrial facilities. The methodology was verified and updated, and is applied to facilities to identify and rank facility hazards. The outcome of this analysis is a set of recommendations for actions and activities that when implemented will increase prevention and enhance safety. This process incorporates the Environmental Management System ISO-14001 principles for continuous improvement.

The current investigation, the fourth phase of the project, is aimed at the application and further verification of the developed methodology in a new area – transportation of radioactive sources by vehicles (versus a fixed facility). The project is being implemented at the Scientific and Research Institute of Atomic Reactors in Dimitrovgrad, Russian Federation. This Institute is a large enterprise which is involved in the production and transportation of medical radioactive sources.

The final stage of work is the risk assessment for the most hazardous scenarios identified during the analysis of risks at the Institute. The final deliverable will be the developed recommendations on risk management and reduction of risks in the future. The project will be completed in 2010.

Previous reports on Source Control project are available on EPPR's web page.

Radiological Response Exercises

Exercise "Arctic-2010" was conducted on July 28-29, 2010, at the FSUE "Nerpa Shipyard" in the Murmansk Region in northwest Russia. The purpose of the exercise is to assess consequences and response capabilities to a radiation emergency in the northwest region of Russia.

The exercise scenario involved a radiation accident at a decommissioned nuclear submarine at the pier of the Nerpa Shipyard. The simulated accident occurred during work to remove gas from the pressure vessels of the vacuum systems of the submarine. The radioactive release scenario plans for the release to travel out of the Shipyard site. The extent of the simulated plume required involvement of municipal and regional authorities.

EPPR participated in the exercise both on scene at the Shipyard and in Moscow at the Technical Crisis Center of Nuclear Safety Institute of the Russian Federation (IBRAE), the organization responsible for developing recommendations for protective actions for the population and territories in the Russian Federation.

Video teleconferencing sessions were conducted between the site, regional and federal emergency management centers. Additionally, the event exercised notification and cooperation between the International Atomic Energy Agency and Rosatom. The IAEA posted an exercise message on the Early Notifications and Assistance Conventions website (ENAC), their international emergency notification system. Sweden, Finland, Norway, and Canada also exercised the next step in the international notification process by confirming to IAEA's Incident and Emergency Center receipt of the exercise notification.

A final report on the exercise will be submitted to EPPR for review at the November 2010 meeting.

Crisis Center Support

Begun in 2007, technical work was completed in 2009 to enhance technical support in radiological issues to EMERCOM's National Crisis Situation Management Center (NCSMC). The NCSMC, responsible for all emergencies, requested augmentation in technical radiological issues. The goal of the Project was to develop an emergency resource center of information, data bases, procedures, and technical systems at the Technical Crisis Center of IBRAE to enable it to provide scientific and technical support to NCSMC for response to radiation emergencies.

Under the Project, new informational and program systems for the assessment of radiation accident consequences were developed and the existing systems were upgraded. The databases on radioactive sources at industrial facilities, medical institutions, and research institutes were developed and the necessary data collected. The scenarios of potential radiation emergencies at the facilities were analyzed in relation to their possible radiation consequences for the population and territory. Standard manuals, training and lecture materials for EMERCOM personnel were also developed.

The systems and procedures were tested in the course of training emergency response personnel in the Murmansk Region and during exercises at Balakovo NPP.

The project was successfully completed in December 2009. EPPR has created a fact sheet on this project to be finalized at the November meeting.

Community Radiation Information

The Community Radiation Information Projects are continuing with the development of tools to help specialists communicate radiation and emergency information with the public and media. An earlier project was the development of the brochure: "The Far East: Nuclear Technologies and Environment," which is widely used as an informational tool for experts and decision makers in the region. The State Atomic Energy Corporation Rosatom of the Russian Federation has found the EPPR brochure to be very useful and is separately adding new data for the years 2008-2009 to the document for their use. Another current project focuses on developing a computer simulation program to enable emergency public information responders to practice interacting with the public during simulated emergency events. The responder is faced with a variety of potential scenarios for public interaction and must choose the appropriate response of several presented to effectively communicate information to minimize public anxiety and control rumors. This project will be completed in November 2010.

In addition, work continues on a Glossary for Nuclear Power Plant Information Services that translates scientific and technical terms into plain language. It includes the list of the basic terms used by experts during a radiation incident or accident, the perception of these terms by journalists and population, and recommendations on using these terms in public communications under the different event conditions (according to the International Atomic Energy Agency's INES event scale, a communication tool). The project will be completed in May 2010. The accumulated experience was used to prepare public information messages during the EPPR exercise at the "Nerpa" Shipyard in July 2010.

Analysis Capability: Programs "Nostradamus" and "Trace_Win"

This project is aimed at equipping the facilities of the North West Region of Russia involved in nuclear submarine decommissioning, nuclear ship maintenance, and spent nuclear fuel and radioactive waste management with the two software packages "TRACE_WIN" and "NOSTRADAMUS." The software packages were developed by the Nuclear Safety Institute of the Russian Federation (IBRAE) to forecast and assess radiation conditions. This site-specific software to model airborne radiological dispersion and contamination from an accident provides critical information to decision makers.

The specialized geo-information system TRACE_WIN allows users to simulate, monitor, analyze, and map atmospheric radioactive releases. The main advantages of this model are its simplicity and immediacy. The computation takes a few seconds so TRACE_WIN is ideally used for the initial (approximate) assessment of the radiation release.

The Nostradamus package is designed to forecast aerosol and gaseous releases under variable weather conditions. Nostradamus is an advanced tool and allows users to

calculate pollution transport for hundreds of kilometers in changing weather conditions for a source of arbitrary configuration and form, taking into account specific terrain features.

Since 2004, these modeling programs have been adapted to the specific features of 14 facilities in Russia and have been installed in their emergency crisis centers. Facility-specific information includes electronic geographical maps, landscape information, and databases on the applicable radionuclides and the civilian communities around each facility.

The purpose of the current Phase V of the Project is to improve the methods of calculating outputs in convenient formats for further data analysis and processing, and to adapt NOSTRADAMUS and TRACE_WIN software packages to the specific features of three additional Rosatom facilities. Both packages are widely used during preparation and conduct of national and international exercises and emergency response drills related to airborne radiological dispersion and contamination.

Emergency Rescue Team Equipment

The aim of this project is to upgrade the equipment of the Emergency Response Team at the CS “Zvezdochka” facility and enhance the level of preparedness to respond to radiation accidents at the facility. Initiated in 2009, this activity was begun following the results of the “Arctic-2008” exercise conducted at the facility and the lessons learned and recommendations provided by observers. The exercise identified that some emergency rescue team equipment was no longer reliable and was difficult to service.

The project includes an analysis of the existing equipment, development of the modernization plan, development of methodological tools for the facility’s emergency rescue team, purchase and installation of equipment, and training.

In 2009, the analysis of the existing equipment was performed, the recommendations to purchase new equipment were made, and the list of required equipment was agreed to by the management of the facilities. An advanced system for individual dose monitoring including 500 individual dosimeters, the dosimeter readers, and specialized software was purchased from Angarsk ECC.

Response training for personnel who will use the purchased system was conducted in February 2010 at the manufacturer’s site.

In 2010-2011, the equipment will be tested and transferred to CS “Zvezdochka.” Procedures on how to use the equipment in radiation emergencies will be developed, and additional training for the members of the Emergency Response Team at the CS “Zvezdochka” will be conducted. The project will be completed in 2011.

Radiation Survey Simulation System

The aim of this project is to develop a site-specific computer system to dynamically model results of nuclear accidents and releases. The system is designed to simulate a release within the first day after an accident at a nuclear facility under conditions of a long-term release of arbitrary radionuclide composition, and is tailored to the specific features of radiation hazardous facilities.

The system is intended to be regularly used for emergency drills and exercises. Drills and exercises are the most efficient form of preparedness training to mitigate accident consequences. Through training and use, the simulation system will contribute to improving the practical skills of authorities, emergency rescue teams and facility personnel in emergency situations.

Such simulation systems have already been installed at four Russian radiation hazardous facilities. In the current phase of the project, the simulation systems will be developed and installed at CS "Zvezdochka," Archangelsk Region, Severodvinsk and JSC MSZ, Moscow Region, Electrostal. Appropriate training of personnel is an important part of the project.

This project is in its final stage. Most of the development, installation of the systems, and training has been accomplished. The project will be completed in May 2010. The aim is to develop a site-specific modeling system for use in training and conducting exercises to simulate a radiological accident at two specific facilities.

The aim is to develop a site-specific modelling system which will simulate a radiological accident at two specific facilities. The simulations will be used to train personnel and to conduct exercises.

Activities within Natural Disasters

Managing the cold conditions – a systematic approach

The project "Managing the cold conditions - a systematic approach" aims to build up the capacity for protection against extreme cold temperatures as part of the regional and interregional Emergency and Rescue Services in the Barents Region. Covering primarily safe treatment of victims in winter conditions, it aims also to support operations in the same situations. A financial application drafted by Finland as the lead country has been submitted to the international selection committee. It is anticipated that the project period would span from 2010 through 2012. Regional Council of Lapland is responsible for the project administration.

Collaboration with Permanent Participants, other Arctic Council Working Groups, and Other Relevant Bodies

To increase effectiveness and minimize duplication, EPPR works with Arctic Council entities and other organizations with the common goal of addressing the Arctic perspective in emergency preparedness and response. EPPR will cooperate with other organizations by:

- Working together with AMAP and CAFF on the Arctic Council Spatial Strategy;
- Maintaining liaison with PAME and support relevant PAME projects such as the Arctic Ocean Review and a follow up projects resulting from the AMSA report;
- Maintaining liaison with the University of the Arctic;
- Maintaining liaison with the Nordic Mapping Agencies on Arctic Mapping;
- Undertaking activities with the Northern Forum that support the EPPR agenda;
- Maintaining liaison with the oil industry and other relevant organizations with the aim to enhance oil spill prevention, preparedness and response in the Arctic.

3. EPPR Working Group Administration

Secretariat

The U.S. provides Secretariat support to the Working Group. This support will continue through the April 2011 Ministerial.

Project Planning

EPPR agreed to a framework for proposing, tracking, and recording projects as an accepted EPPR business practice. The framework can be found on the EPPR web site. The framework is designed to more fully communicate the latest information on EPPR activities, to facilitate the increased reporting requirements, and to better track the status of projects. Its use is encouraged for all future proposals and projects.

Web Page

The EPPR's homepage <http://eppr.arctic-council.org/> is currently maintained by Swedish Radiation Safety Authority. The web site has been modified to increase the amount of information available on the web site and to highlight more timely information.

The EPPR homepage serves as its main outreach and communication tool. All EPPR-related reports, brochures, posters and other resources are available on the homepage. All of the documents are provided in English and some in Russian. We are fielding a demonstration site for comment and review at: <http://epprdemo.net>. Comments regarding the demonstration web site are welcome. The new web site will be operational by December 1, 2010.

4. Direction from the Tromsø Ministerial Declaration

Based on the directions and instructions from the Tromsø Ministerial meeting, and in accordance with EPPR's work plan, EPPR has continued working on existing projects and is developing projects to address new areas, in particular issues identified in the Arctic Marine Shipping Assessment. The 2009 Arctic Council Ministerial Meeting in Tromsø, Norway endorsed activities relevant to EPPR for the timeframe of 2009-2011 as follows:

Arctic Marine Environment

Approve the Arctic Marine Shipping Assessment (AMSA) 2009 Report including its recommendations on enhancing Arctic marine safety, protecting Arctic people and environment and building Arctic marine infrastructure and **request** Senior Arctic Officials (SAOs) to develop appropriate follow up actions,

Note that increased marine access and navigation in the Arctic Ocean calls for development and implementation of suitable national and international regulations, where appropriate, to advance the safety of Arctic marine shipping, including marine pollution prevention, reduce accident risk, and facilitate effective emergency response,

Encourage active cooperation within the International Maritime Organization (IMO) on development of relevant measures to reduce the environmental impacts of shipping in Arctic waters,

Urge that the ongoing work in the IMO to update the Guidelines for Ships Operating in Arctic Ice-Covered Waters be completed, application of its relevant parts be made mandatory, and global IMO ship safety and pollution prevention conventions be augmented with specific mandatory requirements or other provisions for ship construction, design, equipment, crewing, training, and operations, aimed at safety and protection of the Arctic environment,

Welcome the new Arctic Council project on "Development of safety systems in implementation of economic and infrastructural projects in the Arctic", noting its comprehensive character and importance in minimizing the risks of increased human activity,

Approve the establishment of a task force to develop and complete negotiation by the next Ministerial meeting in 2011 of an international instrument on cooperation on search and rescue operations in the Arctic,

Approve the revised Arctic Council Offshore Oil and Gas Guidelines and **urge** all States to apply these Guidelines throughout the Arctic as minimum standards in national regulations,

Human Health and Human Development

Recognize that education, outreach, scientific research, traditional knowledge and capacity building are major tools to address challenges in Arctic communities and **recommend** that, where relevant, Arctic Council projects include these elements,

Recognize that the University of the Arctic (UArctic), a network of higher education institutions in the Arctic, is an effective partner to promote the sustainable development of the region, and **welcome** its new mechanisms to further fund activities,

Energy

Approve the findings and recommendations of the assessment of Oil and Gas Activities in the Arctic: Effects and Potential Effects,

Emphasize that while there has been significant progress in technology, management, and regulations that have greatly reduced the impact of oil and gas activities, environmental risk cannot be eliminated,

Decide to strengthen cooperation on prevention of, and response to, accidental spills of oil and hazardous substances in the Arctic,

Urge Member States to apply the precautionary approach and polluter-pays principle as reflected in Principles 15 and 16 of the Rio Declaration, respectively, and conduct risk and environmental impact assessments for the exploration, development, transport and storage of oil, and enact and/or enforce appropriate laws and controls,

Recognize that environmentally sound oil and gas activities may contribute to sustainable development of the Arctic region

Annex A: EPPR Project Proposals

1. **Project Title:** Arctic Region Oil Spill Response Resource and Logistics Guide.
2. **Project Overview:** This project will survey the oil spill response resources and capabilities of Arctic States to respond to oil spills in Arctic waters, both near coastlines and on the high seas. Survey information will be used to develop a set of maps of the Arctic region containing the location and a description of available resources for oil spill response. A Reference Guide will be developed providing additional details on the location and type of oil spill equipment available at each location, and the process for making requests for the use of such equipment in an emergency situation. Wherever possible, the information will include the specifications for the equipment available at each location, and whether the equipment is compatible with that of neighboring Arctic countries. Since much of the equipment is not cached locally, the project will also note the location of airports and docking facilities that would be used in event of a spill noting their capabilities. Information on available human resources and their location will also be included. Maps and reference guide will be produced electronically and can be updated as warranted by changing conditions by the participating country's designated representative. Maps and reference guides may also be produced in traditional hard copy form and these may be updated periodically as changes in the original information warrant, pursuant to a new funding proposal approved by EPPR. This is a 3-year project.
3. **Lead Organization:** The United States National Oceanographic and Atmospheric Administration (NOAA) will be the primary lead. Other Arctic countries are invited to co-lead the project.
4. **Point of Contact:** Dr. Amy Merten, United States National Oceanographic and Atmospheric Administration, <Amy.Merten@noaa.gov>
5. **Background Information:** The purpose of this project is to improve access to critical information on the location of resources needed to respond to oil spills in the Arctic and to develop electronic response infrastructure for use in the Arctic. This project will continue to develop circumpolar environmental pollution response capabilities that are critical to protect the unique Arctic ecosystem from oil spills occurring near Arctic shorelines or in the Arctic's high seas. Decreasing ice cover is expected to open new shipping routes through the Arctic. The Arctic Marine Shipping Assessment 2009 Report at p. 5 states: "The most significant threat from ships to the Arctic marine environment is the release of oil through accidental or illegal discharge." It is also believed that much of the undiscovered oil and gas resources exist in the Arctic. This project addresses spill concerns by facilitating access to vital information that will be needed by national governments in the Arctic to effectively respond to a spill.
6. **Detailed Project Description:**

a) Goals:

The overall goal of the project is to improve oil spill response by identifying the available resources and the logistical constraints that need to be accounted for in the Arctic.

Project objectives include:

To conduct a survey of the type and location of oil spill response equipment, logistical facilities, and personnel in participating Arctic countries.

To develop and disseminate the Arctic Oil Spill Response Maps and Guides electronically (hosted on a website) and in hard copy to serve as a reference guide for oil spill response capabilities in the Arctic.

b) Approach:

The map will be based on a web-based, open source design that readily allows specified users from various countries to input information and all users to view that information. The technical strategy of this project relies upon a suite of existing and mature open source software projects that are used prolifically on a worldwide scale. This strategy ensures that core components of the system will advance in functionality with minimal effort of the project team. The exact approach is to be determined, but one such approach is to develop a database using PostgreSQL database platform, Geoserver platform for rendering and data access, and Google maps for display. All of these technologies have been in production and actively developed for a substantial period of time and support for these technologies has been secured from industry insuring that they will persist into the foreseeable future.

Using this general approach it will only be necessary to develop the underlying database structure and mapping software once to cover all regions. The United States National Oceanic and Atmospheric Administration currently has plans to develop an Environmental Response Management Application (ERMA) for the U.S. Arctic. The desired map of equipment locations and logistical facilities is a layer within ERMA that can readily be separated out in a form appropriate to which all Arctic countries may contribute. We propose that the U.S. develop the underlying data management and delivery structure and have other countries contribute their information to it.

To contribute to the project each country will need to survey the oil spill response organizations, environmental agencies, and other appropriate groups to determine the pre-staged equipment and its characteristics. Furthermore, the survey should be used to determine the number of trained personnel and their training level. Another effort will be necessary to describe the logistical facilities available for equipment and personnel that would be brought in from outside staging centers.

The end product will be a web-based map of the Arctic that can be used to determine the location of equipment, logistical facilities, and personnel necessary for spill response. It shall be designed to allow users to easily zoom into a region of interest. A hard copy of the maps covering preset regions will be made available.

c) Proposed Major Milestones:

Year 1:

- 1) Obtain EPPR Project Approval
- 2) Enlist participating countries and form Project Team
- 3) Develop Project Management Plan
- 4) Develop Survey Instrument(s) based on Map and Reference Guide content
- 5) Develop database and data delivery systems
- 6) Conduct survey & obtain needed data clarification from survey participants
- 7) Brief EPPR twice a year on progress/milestones

Year 2:

- 1) Compile and organize data from participating countries
- 2) Participating Countries draft Country Reference Guide
- 3) Develop electronic platform for Map and Guides
- 4) Populate and test electronic map and guides
- 5) Begin production on hard copy Map and Guide (assumes there is funding).
- 6) Brief EPPR twice a year on progress/milestones and conduct demonstration of system

Year 3:

- 1) Conduct demonstrations
- 2) Produce hard copy Map and Guides
- 3) Obtain EPPR/SAO review/approval of final deliverables
- 4) Publicize & disseminate Map and Guides
- 5) Determine whether to initiate additional phases of this work
- 6) Brief EPPR one progress/milestones and project completion

d) Implementation strategies:

- 1) Encourage Arctic countries to participate in the survey and to identify national government organizations with responsibility for placing oil spill response equipment and personnel, and with knowledge of the country's transportation and response infrastructure.
- 2) Identify a co-lead and enlist participation from all Arctic nations in order to develop a strong project team of oil spill response experts to guide the work, develop the survey, and obtain comprehensive oil spill resource information.

- 3) Work collaborative with electronic data display and mapping experts. The U.S. will include all Arctic nation resource information that each nation provides in the selected project format.
- 4) Develop a comprehensive project management plan.

e) Deliverables and timelines:

- 1) Develop a web-based Map of the location of Arctic oil spill resources and Guides for each participating country by 2013.
- 2) Publish a hard copy of the Map of the location of Arctic oil spill resources and a Guide or set of Guides by 2013

f) Timeline Identifying Critical Decision Points: A completed project proposal must be circulated no later than Friday, May 14, 2010 in order to be presented to the EPPR Working Group for approval at the June 16 – 18, 2010 meeting in Vorkuta, Russia.

Subsequent approval schedule to be developed in project plan.

7. **Funding:**

Each country participating in the project would self-fund activities it undertakes under this project.

8. **Link to EPPR Mission / Strategic Plan:**

This project addresses the recommendations made by the Arctic Marine Shipping Assessment referred to EPPR for consideration. The EPPR Working Group is an expert forum designed to:

- Plan and prepare for response to accidents;
- Focus on the environmental implications of emergencies involving oil, hazardous and noxious substances (HNS), radioactive substances, and natural disasters in the Arctic. Among others, this project supports EPPR's third objective which is to:

Improve emergency preparedness programmes at local, national, regional and international levels to ensure they are commensurate with the level of risk that exists, including arrangements for mutual assistance.

The project also supports objective 4, which is to improve response capabilities so that they are commensurate with existing threats.

The AMSA Recommendations, adopted by Arctic Council Ministers in Tromso, Norway, requested EPPR to: [c]ontinue to develop circumpolar environmental pollution response capabilities . . . through circumpolar cooperation," AMSA Recommendation III (C).

9. **Partners:** To be determined once EPPR considers project proposal and begins project implementation.

10. **Expected Duration:**

- Start date: June 2010
- Completion Date: Fall 2013

11. **Final Product:**

The project deliverables are:

- a) A web-based Map displaying the locations of oil spill response equipment and other resources and logistical information in the Arctic region. The map can be updated by the authorized national representative to reflect changes in location, number, and type of equipment available, and including related logistical information.
- b) 3 Reference Guides on oil spill equipment specifications and how to access oil spill response resources during an emergency, including related logistical information.

12. **Other Information:**

None at this time

1. **Project Title:** Arctic Automated Mutual Assistance Vessel Rescue Network (AAmverNet)

2. **Project Overview:** This project will survey Arctic nations to determine regional methods of vessel tracking and the incidence of AMVER use in search and rescue cases in the Arctic region, will encourage Arctic nations to have their nationally flagged vessels enroll and report to the AMVER system, and will encourage Arctic nations to share vessel position information with the AMVER system. The project will be broken down into several phases and could become an ongoing program once it is fully implemented. Phase I will include a survey of current vessel tracking and search and rescue capabilities of Arctic nations. Phase II will devise, test, and evaluate a vessel position information sharing network between Arctic region ship reporting systems and Amver. Participation in the vessel position information sharing network will be free of to Arctic countries. Phase III would involve full implementation of the information sharing network if evaluation determines the project should continue indefinitely.

3. **Lead Organization:** United States Coast Guard/Amver Maritime Relations will serve as primary lead, and welcomes a co-lead from one of the members of the EPPR delegation.

4. **Point of Contact:** Benjamin Strong, Director of Amver Maritime Relations (212) 668-7762 benjamin.m.strong@uscg.mil.

5. **Background Information:** Amver, sponsored by the United States Coast Guard, is a unique, computer-based, and voluntary global ship reporting system used worldwide by search and rescue authorities to arrange for assistance to persons in distress at sea. With Amver, rescue coordinators can identify participating ships in the area of distress and divert the best-suited ship or ships to respond. Prior to sailing, participating ships send a sail plan to the Amver computer center. Vessels then report every 48 hours until arriving at their port of call. This data is able to project the position of each ship at any point during its voyage. In an emergency, any rescue coordination center in the world can request this ship position data to determine the relative position of ships, tracked by Amver, that are located near the distress location.

The AMSA report, page 172, specifically mentions the advantage of mutual assistance between vessels operating in the Arctic. Both Amver and VMS Victoria were cited as excellent examples of mutual assistance vessel monitoring systems that could be used for SAR activities in the Arctic. While Long Range Identification and Tracking (LRIT) continues to evolve and, arguably, its technology, cost, and its effectiveness is called into question, legacy systems such as Amver will remain the recognized method of identifying merchant vessels near a distress location at sea.

The Opening of the Arctic Seas Report, issued January 2009, identified a SAR shortfall in an exercise example involving the grounding of a cruise vessel near Greenland. One shortfall specifically cited was the challenge of first response vessels to embark all the potential survivors. It was noted that first response vessels do not have the capacity to

take on large numbers of passengers and the only “viable” rescue vessel would be another cruise ship.

This scenario is similar to an actual incident in the Gulf of Alaska. The Holland America Line cruise ship, Prinsendam, caught fire on October 4, 1980 resulting in 320 passengers and 190 crew abandoning ship. While the United States Coast Guard diverted several cutters and helicopters it also activated the Amver system and diverted the 1,000 foot oil tanker Williamsburgh which ultimately rescued 175 passengers and served as a landing pad for Coast Guard helicopters.

Amver will, upon request of the master of a participating ship, share that position data with the Australian, Chilean, and Japanese regional ship reporting systems free of charge and accept vessel position data from the three systems as well. This information sharing relationship could be expanded to include the Arctic countries and would greatly increase the database of vessels willing to respond to maritime emergencies.

6. **Detailed Project Description:**

a) Goals:

- 1) To determine the types of vessel tracking systems in participating Arctic countries.
- 2) To develop information sharing relationships between Amver and Arctic countries to create a network of regional vessel tracking systems.

b) Approach:

Using the information gained in the survey, the AAmverNet project team will liaise with the Arctic Nations to explore ways to maximize participation and use of vessel tracking data during Arctic SAR emergencies. With support from the United States Coast Guard and EPPR members will collaborate with their national ship registries to encourage greater participation in Amver. Testing will be done between the United States Coast Guard Amver system and the regional vessel reporting systems of the Arctic Nations to determine the best method of combining their position reports into a single product providing a comprehensive picture of ships available to assist in Arctic maritime emergencies.

c) Proposed Major Milestones:¹

Year 1:

- 1) Obtain EPPR Project Approval

¹ Milestone timelines are estimated and subject to development of the detailed project plan. Activities begun in one year may be continued in a subsequent year.

- 2) Conduct vessel tracking capability survey
- 3) Develop project fact sheet for distribution to Arctic countries
- 4) Develop project data request guide for distribution to SAR services of the Arctic countries
- 5) Develop/distribute draft Notice to Mariners² text for Arctic nations to distribute
- 6) Brief EPPR twice a year on progress/milestones

Year 2:

- 1) Begin testing the AAmverNet with one (1) or more Arctic nation on vessel position sharing
- 2) Brief EPPR twice a year on progress/milestones

Year 3:

- 1) Based on the success of Year 2 number 1, begin testing with the remaining Arctic nations willing to share vessel position reports with AAmverNet
- 2) Brief EPPR twice a year on progress/milestones
- 3) Evaluate project and determine whether the project should continue indefinitely

d) Implementation strategies:

1. Encourage Arctic countries to participate in the survey and to identify the national government organization with responsibility for vessel monitoring and search and rescue.
2. Encourage Arctic countries to devise a free information sharing network between regional vessel tracking systems and Amver to create AAmverNet.

e) Deliverables and timelines:

Publish project fact sheets as follows:

- AAmverNet Fact Sheet – 2011

Publish Draft Notice to Mariners as follows:

- Notice to Mariners – 2012

² A **Notice to Mariners** advises mariners of important matters affecting navigational safety, including new [hydrographic information](#), changes in [channels](#) and aids to [navigation](#), and other important data.

Test and Evaluate AAmverNet as follows:

- Pilot network – 2012
- Extended network – 2013

f) Timeline Identifying Critical Decision Points: A completed project proposal must be circulated no later than Friday, May 14, 2010 in order to be presented to the EPPR Working Group for approval at the June 16 – 18, 2010 meeting in Vorkuta, Russia.

Subsequent schedule to be developed in project plan.

7. **Funding:**

Each country participating in the project would self-fund activities it undertakes under this project.

8. Link to EPPR Mission / Strategic Plan: This project addresses the recommendations made by the Arctic Marine Shipping Assessment referred to EPPR for consideration. The EPPR Working Group is an expert forum designed to:

- Plan and prepare for response to accidents;
- Focus on the environmental implications of emergencies involving oil, hazardous and noxious substances (HNS), radioactive substances, and natural disasters in the Arctic.

Among others, this project supports EPPR's third objective which is to:

Improve emergency preparedness programs at local, national, regional and international levels to ensure they are commensurate with the level of risk that exists, including arrangements for mutual assistance.

9. **Partners:**

SAR and Register of Shipping authorities in Arctic countries.

10. **Expected Duration:**

Start date: June 2010

Completion Date Phase I: Fall 2012

Phase II: Fall 2012

Phase III: Fall 2013.

11. **Final Product:** A description of the final output of the project.

The final product is a free information sharing network between the Arctic countries regional vessel reporting systems and the United States Coast Guard Amver system to assist in identifying vessels that can assist in Arctic maritime emergencies.

Annex B: EPPR Workplan 2009 – 2011

ACCIDENTAL OIL POLLUTION: L – LEAD P- PARTICIPANT

Project	Canada	Denmark/ Greenland	Finland	Iceland	Norway	Russian Federation	Sweden	USA
Ongoing								
Arctic Rescue			P		P	L	P	P
Development of Safety Systems in the Arctic while Implementing Infrastructural and Other Economic Projects	P	P	P		L	L	P	P
Behavior of Oil and other Hazardous Substances in Arctic Waters (BoHaSA)	P		P	P	P		P	L
Co-operation on oil spill and HNS response in the Arctic	P				L			P

CO-OPERATION WITH OTHERS AND LIAISON ACTIVITIES

Project	Canada	Denmark/ Greenland	Finland	Iceland	Norway	Russian Federation	Sweden	USA
Ongoing								
Northern Forum on catastrophic floodingAOR?						P		P
Nordic Mapping Agencies on Arctic Mapping					L			
PAME working group (Lead to be determined per meeting)								
PAME Arctic Ocean Review								
Oil Industry					L			P
University of Arctic (Lead to be determined)								
AMAP and CAFF on Arctic Council Spatial Strategy					L			

RADIOLOGICAL EMERGENCIES AND OTHER HAZARDS: L – LEAD P- PARTICIPANT

Project	Canada	Denmark/ Greenlan	Finland	Iceland	Norway	Russian Federatio	Sweden	USA
Ongoing								
Analysis Capability						L		L
Technical Crisis Center support to the EMERCOM Crisis Situation Management Center						L		L
Conduct of Radiation Emergency Exercises	P		P		P	L	P	L
Source Control Phase IV: prevention related to transportation						L		L
Emergency Rescue Team Equipment						L		L
Radiation Survey Simulation System						L		L
Community Radiation Information						L		L

NATURAL DISASTERS L – LEAD P- PARTICIPANT

Project	Canada	Denmark/ Greenlan	Finland	Iceland	Norway	Russian Federatio	Sweden	USA
Ongoing								
“Managing the cold conditions – A systematic approach”			L		P	P	P	

OTHER ISSUES L – LEAD P- PARTICIPANT

Project	Canada	Denmark/ Greenland	Finland	Iceland	Norway	Russian Federation	Sweden	USA
Ongoing								
Host EPPR web site							L	P
EPPR Secretariat								L
Update the Arctic Guide for Emergency Prevention, Preparedness and Response	P	P	P	P	P	P	L	L

