

Oil spill preparedness and response in the French West Indies

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Abstract:

The French West Indies which include four islands (from south to north: Martinique, Guadeloupe, Saint Barthelemy and Saint Martin) have experienced oil landings from ship incidents taking place both far away (e.g. *Vista Bella*) and on their coastline (e.g. *Dolly*). Their preparedness and response are defined in the "Plan Polmar Mer" of the Antilles maritime area prepared under the responsibility of the Prefect, delegate of the Government, in close cooperation with the Navy Commander in charge of the area. The "Plan Polmar Mer" has to be drilled every alternate year.

The last two exercises were organized in 2006 in Guadeloupe and in 2005 in Martinique, with the cooperation of the regional cooperative Clean Caribbean and Americas in the framework of its MOBEX triennial exercise. The 2008 drill took place in the waters of the northern islands, Saint Martin and St Barthelemy, where it had never taken place before. The first aim was to test the reactivity of the Navy to send to this area its specialized evaluation team and equipment located 250 Nm away in Martinique. Cooperation with the Netherlands Antilles was discussed in relation with a recent update of the Caribbean Islands OPRC plan by the RAC/REMPEITC. A workshop on the improvement of regional mechanisms for responding to oil spills, supported by UNEP and IMO was implemented in Sint Maarten, with the participation of 12 Caribbean island states.

Many lessons were learnt from the exercise and workshop, both at the French and regional levels. In case of an incident in the French waters, due to the distance from the stockpile located in Martinique and the lack of nautical and aerial means available to transport the equipment rapidly to Saint Martin (except the aerial mean to spray dispersants), the French authorities will need support from the Netherlands Antilles through their agreement with the oil industry for a tier 1 incident in the first hours after the spill. The improvement of regional operational communication, the need to have bilateral or multilateral agreements as well as an oil spill equipment database in the Caribbean Islands OPRC plan was highlighted. Related recommendations were presented at the Thirteen Intergovernmental meeting on the Action Plan for the Caribbean Environment Programme and Tenth meeting of the contracting parties to the Convention of the Protection and development of the Marine Environment of the Wider Caribbean, in Antigua and Barbuda (9-12 September 2008).

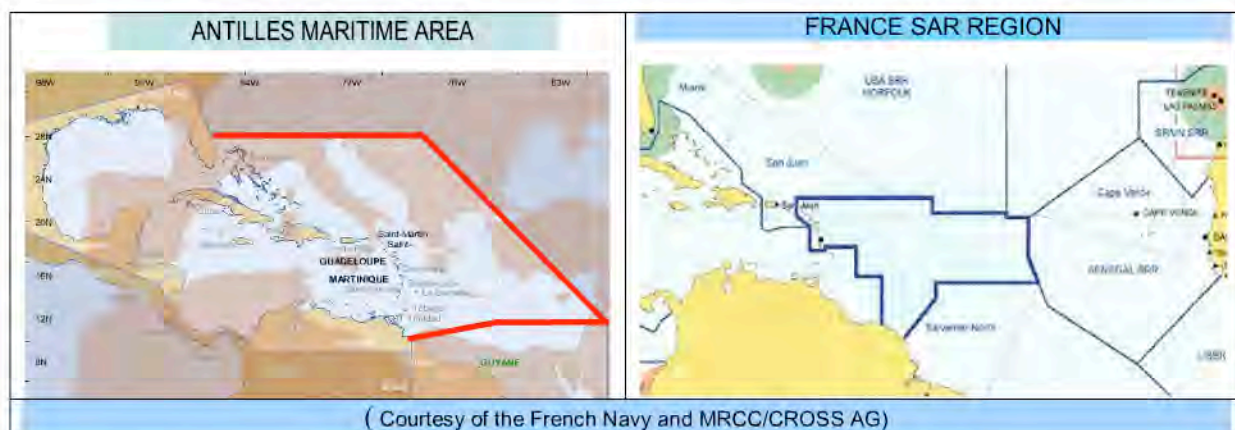
INTRODUCTION

The French overseas territories are islands of the Lesser Antilles of the West Indies, Martinique belonging to the Windward Islands, the southern group of the Lesser Antilles, and Guadeloupe, Saint Martin and Saint Barthelemy belonging to the Leeward Islands. They are located in the Wider Caribbean Region (WCR), a major oil producing area. Venezuela holds the northern hemisphere's largest oil reserves and one of its largest refining systems. The pollution generated from marine-based

sources, such as from ships and marine petroleum exploration and production, is a big concern in the region.

Throughout the insular Caribbean sub-region, pollution by a range of materials including sewage, nutrients, sediments, petroleum hydrocarbons, and heavy metals is increasing. Most of the oil produced within the WCR is shipped in the region resulting in an intricate network of distribution routes. The movement of oil is dominated by crude oil and oil product imports to the USA. Aruba and the Netherlands Antilles (Curacao & St. Eustatius) are centres for both crude oil trans-shipment and refining.

The French islands have experienced oil landings from ship incidents taking place both far away (e.g. *Vista Bella*) and on their coastline (e.g. *Dolly*). Their preparedness and response are defined in the “Plan Polmar Mer” of the Antilles maritime area prepared under the responsibility of the Prefect, Delegate of the Government (DDG). The plan’s preparation is done in close cooperation with the Navy Commander in charge of the area who is assisted by the Head of the AEM Bureau¹ and supported by the Cedre Caribbean Delegation. The “Plan Polmar mer” is supplemented in each island by a “Plan Polmar Terre” designed for response on the shoreline. The plans have to be drilled periodically. In case of a nautical incident, the MRCC Fort de France based in Martinique (named CROSS AG)² is informed and has to notify it to the relevant authorities. The first missions of the CROSS are maritime Search and Rescue and broadcasting of maritime safety information. It is also competent for traffic monitoring, pollution and fishing watch. Regarding marine pollutions, the CROSS collects, checks information and is in charge of the assessment of the situation which will be provided to the services of the Prefect DDG in charge of the response operations, as well as to the State prosecutor, in order to possibly sue the spill authors. The enclosed maps show the Antilles Maritime area and the SAR region under French responsibility according to a resolution notified to every State by the International Maritime Organization (IMO) (circular letter n° 2131 of 28 may, 1999).



As the “Plan Polmar Mer” had never been drilled before in the northern islands of the French West Indies, the 2008 exercise was organized in the waters of Saint Martin and Saint Barthelemy. As usually, the government – industry cooperation with the participation of the French Antilles refinery SARA³ was activated. The first aim was to

¹ AEM Bureau : « Action de l'Etat en Mer » / Maritime Safeguard Bureau

² CROSS AG : Centre Régional Opérationnel de Surveillance et de Sauvetage – Antilles-Guyane

³ SARA : Société Anonyme de la Raffinerie des Antilles. Shareholders : TOTAL, RUBIS, ESSO, TEXACO

test the reactivity of the Navy to send to this area its specialized evaluation team and equipment located in Martinique, at a distance of 250 Nm.

As the island of Saint Martin is divided in two parts, Sint Maarten belonging to the Netherlands Antilles (NA) and Saint Martin to France, the French authorities (AEM Bureau) invited the Netherlands Antilles to participate in the exercise in the framework of the Cartagena convention⁴. As contracting parties to the Cartagena convention and its Protocol concerning cooperation in combating oil spills, the NA and Aruba coast guards (NA&A CG) accepted to cooperate and involved the NA oil industry. To comply with the Oil Spill Protocol and promote the Caribbean Islands OPRC Plan, they accepted also to work with the French adviser seconded to the RAC/REMPEITC-Carib⁵ to organize simultaneously a workshop on the improvement of regional mechanisms for responding to oil spills. This workshop supported by UNEP and IMO was held in June 2008, in Sint Maarten, with the participation of 12 Caribbean island states. Due to the unavailability of the tanker lent by the French refinery SARA for simulating the disabled vessel, the exercise could not be held in conjointly and had to be postponed to November.

MULTILATERAL ENVIRONMENTAL AGREEMENTS IN THE WIDER CARIBBEAN

It is to remind that the largest offshore production spill and tanker spill occurred in the region ("Ixtoc-1" and "Atlantic Empress", 1979). The combination of this high risk and the associated catastrophic impact a major oil spill would have on the environment, and consequently on the economies of most of the small island states and territories, has long been recognized by the IMO, UNEP (CAR/RCU⁶) and partnering governments, industry stakeholders and civil societies.

IMO, in co-operation with UNEP, has over the years played a lead role in helping countries in the WCR develop national and regional plans for marine pollution preparedness and response and take measures related to prevention and control of marine pollution. As a result, there are several multilateral environmental agreements applicable in the region.



Regional plans in the Wider Caribbean Region (Courtesy of RAC/REMPEITC-Carib)

⁴ Cartagena convention : Convention for the Protection and Development of the Marine Environment of the WCR

⁵ RAC/REMPEITC-Carib : Regional Activity Centre – Regional Marine Pollution Emergency, Information and Training Centre for the Wider Caribbean Region

⁶ UNEP CAR/RCU : United Nations Environmental Programme - Caribbean Regional Co-ordinating Unit

Caribbean Environment Programme (CEP) – Caribbean Action Plan - Cartagena convention - Caribbean Islands OPRC Plan

The Caribbean Environment Programme (CEP) is one of the UNEP administered Regional Seas Programmes. The CEP is managed by and for the countries of the WCR through the Caribbean Action Plan (1981) outlining regional environmental challenges.

The Action Plan led to the adoption of the Cartagena convention, in 1983⁷. The Cartagena Convention is the only regional agreement of its kind which provides the legal framework for cooperative regional and national actions in the WCR. It has been supplemented by three protocols addressing specific environmental issues namely, the Oil Spills Protocol, the SPAW (Specially Protected Areas and Wildlife) Protocol and the LBS (land-based sources and activities or marine pollution) Protocol.

The Caribbean Regional Co-ordinating Unit (CAR/RCU) located in Kingston, Jamaica was created in 1986 and serves as Secretariat to the CEP.

Under the Cartagena Convention and its Oil Spill Protocol, the Caribbean countries drafted a Sub-Regional Oil Spill Contingency Plan for the Island States and Territories of the WCR (St. Lucia, May 1984), the "Caribbean Plan". The Caribbean Islands OPRC Contingency Plan, as an up-date of the "Caribbean Plan", was adopted at a meeting convened by IMO (Curaçao, Netherlands Antilles -November 1992) which contributes to the implementation of the *Oil Spill Protocol in the Wider Caribbean Region* as well as the *International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention)* which entered into force on 13 May 1995.

All islands are parties to the Caribbean Islands OPRC Plan, allowing a regional approach and mutual assistance in the event of serious spills which exceed the response capability of individual governments or local oil industry. The OPRC Convention recognizes the importance of involving the oil and shipping industry in the implementation of the Convention and the "polluter pays" principle.

RAC/REMPEITC-Carib

Under the auspices of IMO and UNEP, the contracting parties to the Cartagena Convention have set up a Regional Activity Centre with the aim of assisting countries in implementing an Oil Spill Protocol.

The RAC/REMPEITC-Carib located in Curaçao and acting as a focal point for disseminating information, facilitating training and exercises, and promoting oil spill preparedness, was established on the basis of the *article 9* of the Cartagena Convention's Oil Spill Protocol. The mission statement of RAC/REMPEITC, as approved by the Steering Committee in June '08, is:

"To assist countries to develop their national capabilities to implement the Cartagena Convention Oil Spills Protocol, the OPRC 1990 Convention and other IMO Conventions and Protocols relevant to preparedness for and response to oil, hazardous and noxious substances releases, and other marine environmental threats from ships in the Wider Caribbean Region."

⁷ Cartagena Convention adopted on 24 March 1983 ; entry into force on 11 October 1986 ; ratified by 25 United Nations Members in the Wider Caribbean Region

This Centre is operated under a memorandum of understanding between IMO, UNEP (CEP/ RCU) and the Ministry of Traffic and Transport of the Netherlands Antilles. Projects undertaken by the Centre are implemented by secondments (IMO Consultants) from the USA, France and Venezuela. In order to achieve its missions of training and expertises, the Centre receives in-kind supports from various entities such as Cedre Caribbean Delegation, ARPEL, ITOPF, OSR and CCA.⁸

EXAMPLE OF GOVERNMENT – INDUSTRY AND BILATERAL COOPERATION: WORKSHOP TO DEVELOP A REGIONAL COOPERATION MECHANISM FOR RESPONDING TO OIL SPILLS AND “POLMAR MER 08 EXERCISE”

To comply with the different international conventions, protocols and sub-regional contingency plans ratified by the French government, the Caribbean Delegation of Cedre together with the French Navy and the AEM Bureau are working in relationship with the RAC/REMPEITC-Carib to enhance cooperation between government and industry and between states in the region and especially with the Netherlands Antilles who hosts the RAC/REMPEITC and shares the island of Saint Martin with France.

Considering the distance between Martinique where the “Polmar” stockpiles are located and taking into account the consequences of the Vista Bella incident in 1991⁹ which was a modest pollution and despite the response operations driven at sea became the world record for the largest number of countries struck by a single oil spill, the decision to organize a “Polmar mer” exercise in the waters of St Barthelemy was taken by the French Navy and its operational AEM Bureau.

As soon as the decision was taken, the idea to cooperate with the Netherlands Antilles came up when discussing and evaluating the level of the updating of the Caribbean Islands OPRC plan with the French consultant seconded to the RAC/REMPEITC by the French government and industry. At the same time came the idea to organize, simultaneously to the exercise, a workshop in Sint Maarten to “develop regional mechanisms for responding to oil spills” with the support of UNEP-CAR/RCU and IMO. Representatives of 12 Caribbean island states were invited to participate.

In order to prepare the workshop, the French consultant seconded to the RAC/REMPEITC organized a meeting on March 17, 2008, at the Naval Base Parera in Curacao with the NA&A CG to present the working scenario of the “POLMAR Mer” exercise defined by the AEM Bureau. The scenario planned the implication of the NA&A CG in the initial phase of the response with a reconnaissance overflight. The NA&ACG confirmed their interest in participating to this exercise with the aim of

⁸ ARPEL : Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean, ITOPF : International Tanker Owners Pollution Federation, OSR : Oil Spill Response, CCA : Clean Caribbean and Americas.

⁹ On March 6, 1991, the T/B *Vista Bella*, a Trinidadian-flagged vessel, sank in the Leeward Islands at the eastern end of the Caribbean Sea. At the time of its sinking, the T/B *Vista Bella* was loaded with 13,300 barrels – approximately 560,000 gallons – of No. 6 fuel oil. Over the course of several weeks, the vessel gradually released much or all of its cargo. Rough seas hampered oil containment, recovery and dispersal operations, and significant quantities of oil drifted westward and north-westward across the Caribbean Sea, eventually reaching the shorelines and coastal zones of Puerto Rico and USVI. The oil affected a variety of natural resources and habitats in both Puerto Rico and USVI, including but not limited to mangroves, sea grass beds, coral reefs and sandy beaches.

testing the operational communication between their services and the MRCC Fort de France, the final aim being to see which development in regards to future cooperation could be made. They also expressed their interest in participating in the workshop scheduled at the same time in Sint Maarten.

Caribbean Workshop to develop a regional cooperation mechanism for responding to oil spills

The workshop took place in Sint Maarten, in June 2008.

The objectives of the workshop were defined following the update of the Regional Caribbean Islands OPRC Plan in 2006 and the development of a gap analysis within the Caribbean Islands (Azure Seas Project, 2006) which led to the identification of several key recommendations for follow up action. One of them, which is linked directly to REMPEITC-Carib's existing strategic plan (2006-2007 biennium strategies, goals, and activities), was the need to enhance the exchange of operational information and develop mechanisms for communication as well as regional cooperation in oil spill response in the WCR. International experience has shown that a good communication regime is an essential element for a successful and constructive response to oil spills, as well as a key element for regional / international support in case of such incidents.

Other points were addressed during the workshop

- Overview of the regional status and the strategies in place;
- Share international examples of possible / existing response mechanisms;
- Exchange information on national oil spill response measures;
- Define a range of potential improvement of communication mechanisms (effective dissemination of alerts, facilitation and harmonization of communication and cooperation during oil spills)
- Define a range of potentialities regarding oil spill equipment database and trans-boundary movement of oil spill equipment;
- Agree on next steps for the region with regard to regional oil spill response preparedness.

The partners contributing to the project were RAC/REMPEITC-Carib for the Overall Project Management, UNEP CAR/RCU for Technical support and coordination with relevant organizations, IMO for Technical support and coordination with relevant regional activities, ARPEL and Cedre for Technical expertise and coordination support, CCA, IOPC and ITOPF for Technical expertise.

Oil Spill Preparedness & Mobilization and “POLMAR 08” response exercise

The “Polmar Mer 08” exercise took place in the Antilles maritime area, off St Barthelemy, on November 27th, 2008.

This drill had two main goals, the mobilization of the assessment team (1st phase) and the management of the disaster and response to the pollution (2nd phase). The following *scenario was set up*:

The tanker “Salome” in transit off St Barth with a cargo of heavy fuel oil hits a container lost at sea on her port side at 17°54 N – 62°5 3W. As a consequence, several damages are observed:

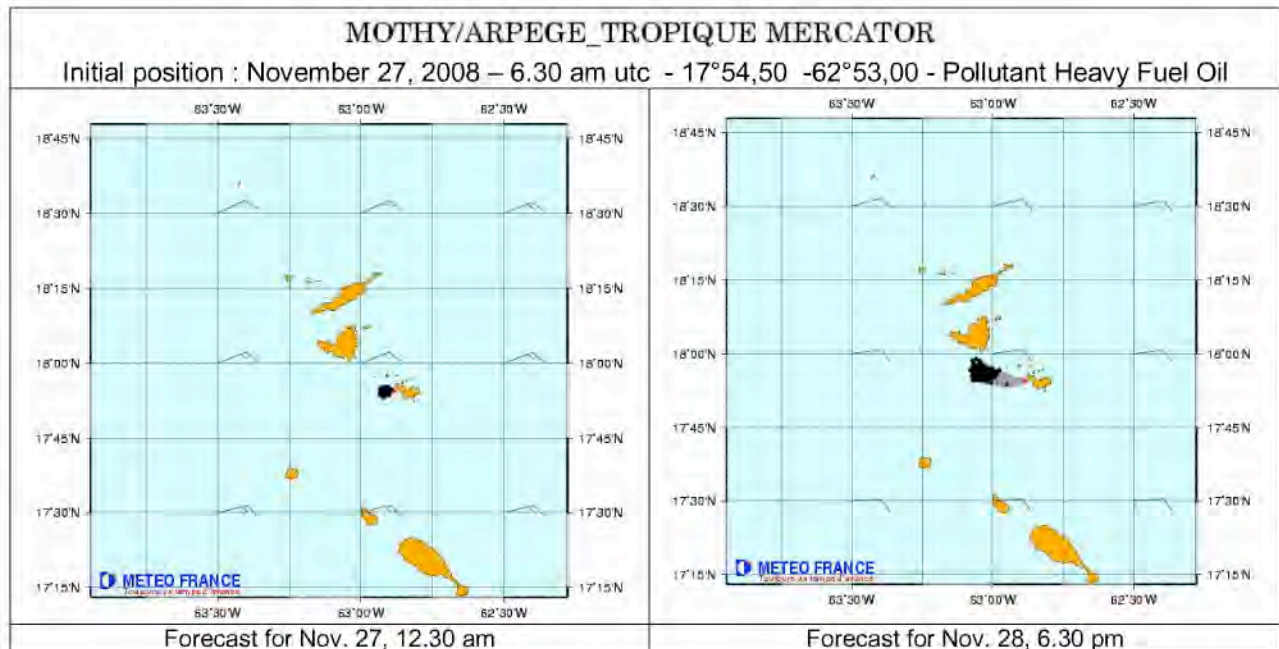
- Break of the hydraulic flutings of deck.

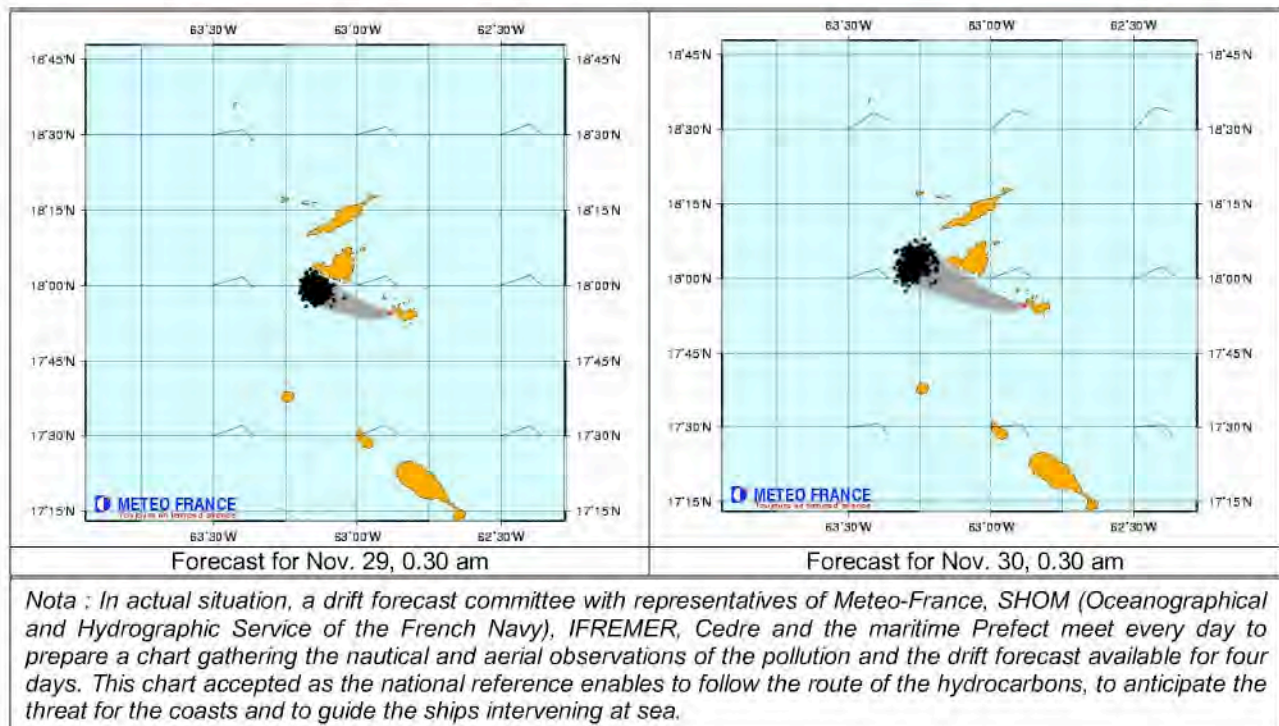
- Tank explosion.
- Loss of the electric power for the operation of fore winches.
- The engine control room is also damaged entailing a loss of propulsion.
- Fire initiated and extinguished by the crew.
- A member of the crew is injured.

Oil is leaking from a tank on port side.

Alert and organization of the response: At 6.30 am (local time), the tanker “Salomé” sends an alert to the MRCC Fort de France (CROSS AG) who immediately informs the MRCC Curaçao and the NA&A coast guards and establishes a crisis management team under the authority of the Prefect DDG including the French Navy Commander, the Head of the AEM Bureau who are joined later by a representative of the NA&A coast guards and salvage master of NuStar Energy.

Immediately after the alert, the Cedre response team was activated and sent information on the physical characteristics of the oil and asked Meteo-France, the French national weather forecast centre to activate its numerical marine oil pollution transport model, named MOTHY, designed to simulate the transport of oil in three dimensions. In MOTHY, a hydrodynamic ocean model is linked to an oil spill model including current shear, vertical movements and fate of the oil. In case of marine pollution, Meteo-France sends meteorological and pollutant drift forecasts to the authorities in charge of pollution fighting. This response system has been operational since 1994. The results of the simulation showed a clear trend to a West – North West drifting of the oil slicks.





On site, the tanker “Salomé” was the disabled vessel. The oil slick was simulated by fire fighting foam sprayed by the French Navy’s tug boat *Maïto*.

The assessment team was sent by helicopter from Martinique and the tug “Maïto” was mobilized with specialized means (containment booms and skimmers). The assistance of the French sea rescue fast boats of Saint Barthelemy and Saint Martin was required and the cooperation with the Netherlands Antilles was activated. On request of the NA&A CG, the NA oil industry of Sint Eustatius, NuStar Energy sent a response vessel, the *Statia Responder*, with its trained and experienced crew members, on site and an aerial survey was conducted by the NA&A CG’s DASH 8. The observations made at sea by the DASH 8 were relayed back through the MRCC Curacao to the MRCC Fort de France where the crisis management team organized the response in tight cooperation with the on site commander of the operations who was also the on site director of the exercise.

Containment and recovery operations at sea were carried out by the French tug boat *Maïto* and by the response vessel *Statia Responder* of NuStar Energy oil terminal of Sint Eustatius. At the beginning of the boom deployment around the tanker, a short period of rough sea state disturbed the operations but as the meteorological conditions improved the containment operations were achieved and the recovery operations were successful.

This exercise was the second exercise to be organized by the French Antilles authorities in its waters after the MOBEX – POLMAR exercise organized in 2005 jointly by the French Navy, the Cedre Caribbean Delegation and Clean Caribbean & Americas. These two exercises were very good examples of cooperation between government and industry at national, regional and international levels.

OBJECTIVE REACHED - LESSONS LEARNT

The project objective was to develop the first phase for regional cooperation between Caribbean countries in case of oil spills by establishing a comprehensive

communication regime. The project involved 12 countries with a particular cooperation between France and the Netherlands Antilles, drilled during the “Polmar Mer” exercise, first step of bi-lateral cooperation with a view towards a bi-lateral agreement.

The project was organized taking into account the lessons learnt from the Vista Bella incident (1991) which resulted in the pollution of marine and coastal environment of a large number of islands as far as 200 nautical miles from the source. Among the lessons identified, difficulty in reaching agency personnel in the area during the week-end as well as reaching the US Embassy in Antigua (early in the incident) contributed to the communication problem. Another difficulty was the lack of commercial response equipment on the neighbouring islands (Antigua, St Kitts and Nevis), the nearest response equipment being located in San Juan (Puerto Rico) and Venezuela. Differences in electrical power at the cleanup sites, (electrical equipment had to be operated using a step-down power transformer) was also a source of problems.

Taking into account these lessons, the NA&A CG who do not have any specialized equipment in Sint Maarten contacted the local oil industry, the NuStar Energy oil terminal of Statia in Sint Eustatius which is an associate member of CC&A.

The exercise was a good opportunity to test the communication of information between the MRCC Curaçao and the MRCC Fort de France and between the nautical and aerial means on site and their respective MRCC and crisis management team.

Despite the exercise was simulating a tier 2 incident, to simulate an upgrading in the response linked to an increasing quantity of oil spilt meaning a tier 3 response, it also gave rise to the test of the CCA activation protocol by the French authorities.

The exercise and the workshop were intended to enhance the countries involved to meet their obligations under the Protocol of the Cartagena Convention concerning Co-operation in Combating Oil Spills in the WCR and especially the following articles:

Article 2: It applies to oil spill incidents which have resulted in, or which pose a significant threat of pollution to the marine and coastal environment of the Wider Caribbean Region or which adversely affect the related interests of one or more of the contracting parties.

Article 4: Exchange of information

Article 5: Communication of information concerning and reporting of oil spill incidents

Article 6: Mutual assistance

Article 7: Operational measures

Article 8: Sub regional arrangements

- 1. With a view to facilitating the implementation of the provisions of this Protocol, and in particular articles 6 & 7, the Contracting Parties should conclude appropriate bilateral or multilateral sub regional arrangements.*
- 2. Contracting Parties to this Protocol which enter into such sub regional arrangements shall notify the other Contracting Parties, as well as the Organization, of the conclusion and the content of such arrangements.*

Recommendations were made by the participants to intensify national and regional efforts to implement the above-mentioned articles. The REMPEITC website will be used for the exchange of information which will have to be regularly updated by each country focal point (National and Regional Contingency plans, equipment databases,

etc). The existing operational regional agreements (Biscaye Plan, Manche Plan) will be assessed in order to determine to which point they could be adapted to the WCR. The MRCCs will be used as one of the initial points of contact in case of regional oil spills. Regular regional simulation exercises will be conducted. High level meetings of OECS¹⁰, CARICOM¹¹, IMO, UNEP and other relevant regional decision-making fora could be used as existing mechanisms and frameworks to highlight the importance of regional cooperation in responding to oil spills at the highest political level.

Results and recommendations of the workshop were presented at the 13th Intergovernmental Meeting of the Cartagena Convention in St John's, Antigua and Barbuda, 9-12 September 2008. The experience gained during the workshop and the exercise will be used in the Wider Caribbean Region and should provide a basis for the CAOP project (project for the definition of the Central America OPRC Plan) once its first phase related to National Contingency Plan is completed.

The improvement of regional co-operation in Combating Oil Spills in the Wider Caribbean Region is now in the hands of the contracting parties to the Cartagena convention and its Oil Spill Protocol.

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¹⁰ OECS : Organisation of Eastern Caribbean States (9 members and 2)associate members

¹¹ CARICOM : The Caribbean Community, organisation of 15 Caribbean nations and dependencies