

**New Challenge in Latin American and Caribbean Oil Spill Control:  
Offshore Prevention and Response after the DWH Milestone**

*Carlos Sagrera, MISCO*

[carlos.sagrera@mtcconsult.org](mailto:carlos.sagrera@mtcconsult.org)

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With offshore activities at different exploration and production stages in virtually all South American countries with sea coasts, a Central American country, and some Caribbean countries, the Deepwater Horizon (DWH) disaster has not gone unnoticed among the governments and the oil industry in the area. Organizational and human errors committed and highlighted in the investigations that have successively come to light in such a world power as the U.S.—a leader in the sector—, bring to mind the realities and systemic safety failures of the schemes and procedures in force, both in the oil industry and regulatory authorities, to control these potential environmental disasters. **The offshore issue has become a priority in the Latin American and Caribbean oil industry** and grows because of the recurrent confirmation of new oilfields and their successful exploration by international oil companies through block concessions, which is the only way to access the required effective technology for exploitation. Over the past decades and without exception, **Latin America and the Caribbean has gone through emergency situations** with spills from oil tankers, explosions and fires in refineries, pipeline fires and sabotage, and **explosions and sinkings of oil rigs**. The shy cooperation attempts between states and national oil companies obtained few concrete results despite the efforts of regional organizations such as ARPEL. **This paper emphasizes the weaknesses in response procedures and standards through specific examples of recent incidents in “the Big Three” (Brazil, Mexico, and Venezuela)**, which could become worse in the current **offshore deep and ultra-deep water scenario**. It **challenges the National Contingency Plans** that must now include offshore goals and an organization scheme, such as **the Incident Command System**, which must be adapted as soon as possible due to the new scenarios and the need for effective **inclusion of environmental actors** previously relegated. The paper also outlines **response strategies applied in DWH** and their possible use in offshore scenarios in the region, which will require coordinated efforts by all stakeholders. It emphasizes that this is an excellent opportunity for operational improvement of the Latin American and Caribbean oil sector with respect to safety, emergencies, and spill control.

**I. The General Scenario**

Four years after the “campaign of the Deepwater Horizon (DWH),” as Admiral Thad Allen called it,<sup>1</sup> Latin America and the Caribbean’s (LAC’s) oil industry and state sector have had a slow reaction, and the adjustments to their procedures and response capabilities are in line with their circumstances.

The DWH spill incident was a disgrace for the United States; however, it should prove to be an opportunity for LAC countries, especially for those with similar prospecting offshore activities, i.e. in deepwaters, which is the inexorable trend at the beginning of this

<sup>1</sup> <http://www.defenceiq.com/defence-technology/articles/deepwater-horizon-s-influence-on-contingency-plan/> - Posted 07/19/2010 – Author: O’Neil, Chris – Ed. Contingency Today – Last check: 02/27/2014

21<sup>st</sup> Century.<sup>2</sup>

There was no autonomous response capacity for anything of this magnitude, not only in LAC but also worldwide. There was no equipment or sufficient human resources, not even the expertise. Not only the responsible company, but also all U.S. and worldwide levels involved, had to appeal to their best technology, resources, and reserves in order to solve this major specialized oil engineering problem and its massive environmental consequences. DWH's first big result is that the myth that nothing could be done in waters of such depth and directly inaccessible to man, has fallen. The rest of the world must now bear a heavy burden and added costs. **This includes nearby LAC, at a time when it is opening towards offshore, where there is surely interest from international oil companies (IOCs) that are forced to diversify due to U.S. reinforcement of controls and new regulatory requirements** on prevention in the Gulf of Mexico that will inevitably expand to the region. This extends to the EU, with its new post-DWH directive that affects IOCs operating in the region.<sup>3</sup> It will also include changes to state regulatory regimes in all of LAC's sector.

The DWH incident aside, it is well known that LAC depends on foreign technology. This is one of the main reasons why many LAC countries, historically reluctant to opening their oil exploitation to foreign countries, have now opened their offshore block concessions partially or totally to foreign multinational oil companies. Brazil, Peru, Argentina, Trinidad and Tobago, Colombia, Guyana, Surinam, The Bahamas, Jamaica, Uruguay, and even Ecuador, Nicaragua, Venezuela, and Cuba, have followed that path, seeking a gradual access to a know-how that is integrated to their national companies. Resisting this and betting on LAC's endemic lags in terms of updating prevention procedures and controls carried out by the traditional national authorities concerned in the oil industry in each country, would be a great strategic mistake on the part of concessionary IOCs and national oil companies (NOCs). Actors who have recently arrived in LAC must be considered: **environmental controls by Latin American authorities** in the oil and offshore industry are **increasing and so is transparency**. This could alter an initially favorable equation if companies do not handle the variable properly. Globalization plays a part as well; **it is extremely dangerous to think that authorities in LAC will act as permissively as they have in the past**, when there are environmental effects at stake.

In their exploration and exploitation activities in LAC's oil and gas offshore, IOCs and NOCs shall implement the best of their state-of-the-art oil and gas engineering, which meets the highest international standards in terms of safety and prevention of industry emergencies. Nevertheless, it is internationally known—albeit covertly—mainly by lawyers who specialize in long trials after incidents, that when there are events involving safety issues in the oil industry—not just regarding offshore—authorities and local justice officials **in LAC use a different ruler to measure cases concerning IOCs as opposed to NOCs**.

**LAC is also aware of the notorious lack of an international framework regarding liabilities and sufficient compensations related to damages caused by offshore activities.** As stated, this was not a unique problem, nor was it created in the U.S.; it was well known by the industry long before the DWH incident. In fact, two years before, the Montara wellhead

<sup>2</sup> <http://www.offshore-mag.com/articles/print/volume-73/issue-5/international-report/deepwater-operators-look-to-new-frontiers.html?cmpid=EnIOSshowdailyOctober222013> - Posted 05/01/2013 – Authors: Nelson, K.; De Jesus, M.; Chakhmakchev, A.; Manning, M. – Ed. Offshore Magazine – Last check: 02/27/2014

<sup>3</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:178:0066:0106:EN:PDF> - Posted 28/06/2013 – Author: Directive 2013/30/EU of 06/12/2013 – Ed. EU Parliament & Council – Last check: 02/27/2014

platform oil spill in Australia's Economic Exclusive Zone (EEZ) was an example of this issue.<sup>4</sup> It would not be wrong to state that there has been some generalized complacency with the *status quo* that the situation implied, among governmental organizations and companies. The key is that there is no generalized legal instrument that covers liability and compensation for damages caused by offshore operations.<sup>5</sup> Considering the close relationship between IMO and LAC's Maritime Authorities, it is safe to say that there will be no progress on this continent by this means. The issue is far from being solved. It is a matter of waiting for similar incidents in order to increase international pressure to review the schemes. The important thing is that LAC has not yet developed a specific regional agreement for offshore, which implies a significant delay. With this international scenario, **each country is responsible for its direct contractual relationship with offshore operators in its own waters**, as well as the clarification of liabilities and sufficient financial guarantees in case of environmental damages due to operators' activities. This should be **carefully specified in E&P block grants granted in LAC**, such as the recent 35-year production sharing contract to develop the giant Libra pre-salt oil discovery located in Santos Basin.<sup>6</sup>

DWH has proven that **National Contingency Plans (NCPs)** must be efficient and updated, with **realistic risk assessments that contemplate catastrophic scenarios**, something we regard as deficient in the region. In LAC, **NCPs are little used, generally outdated, and have almost no reference to offshore**; therefore, roles and decisions are at risk of being ineffective in LAC.

Needless to say, former regional Clean Caribbean and Americas (CCA) cooperative will be present in operations within the framework of international cooperation in LAC, although how it is outlining its response strategy for this type of incident on deepwater platforms, far from the coast and with much greater logistic requirements than usual, remains to be seen. Perhaps that was one of the main reasons why **CCA merged with Oil Spill Response Limited (OSRL)** at the beginning of 2013.<sup>7</sup> The expansion of upstream activities in LAC and especially offshore in deepwaters made the merger almost inevitable. CCA was actively present during the response operations of DWH, through the provision of equipment for the use of aerial dispersants,<sup>8</sup> so its accumulated contribution and recent experience should prove very useful.

**ARPEL articulates safety issues in LAC's oil industry** and IMO is connected with maritime authorities regarding conventions on maritime safety and, potentially, offshore issues. A **regional branch of IMO that operates in the Caribbean, RAC/REMPEITC-Caribe**, prioritizes prevention and focuses its efforts on contingency plans and stakeholder training.<sup>9</sup> Central America was under its influence regarding oil-spill safety matters and

<sup>4</sup> Storrie, J. - The Montara Wellhead Platform Oil Spill. A Remote Area Response. Proceedings IOSC 2011, Portland, OR. – <http://ioscproceedings.org/> - Last check: 02/27/2014

<sup>5</sup> There are some regional instruments of limited coverage for offshore operators in the North Sea, called The Offshore Pollution Liability Association Ltd. (OPOL). The liability limit is USD250 million for the incident and cannot exceed USD500 million annually. [www.opol.org.uk](http://www.opol.org.uk) - Last check: 02/27/2014

<sup>6</sup> <http://www.offshore-mag.com/articles/2013/10/shell-consortium-wins-psc-for-libra-oil-field-offshore-brazil.html> - Posted 10/21/2013 – Author: Offshore Staff – Title: Shell Consortium Wins PSC for Libra Oil Field Offshore Brazil - Ed. Offshore Magazine – Last check: 02/27/2014

<sup>7</sup> <http://www.oilspillresponse.com/about-us/2011-12-21-08-34-02/featured-reports/345-integration-of-clean-caribbean-a-america-cca> - Title: Integration of Clean Caribbean & Americas (CCA) - Last check: 02/27/2014

<sup>8</sup> Clean Caribbean and Americas (CCA). [www.cleancaribbean.org](http://www.cleancaribbean.org) - Last check: 02/27/2014

<sup>9</sup> <http://cep.unep.org/racrempeitc> - Last check: 02/27/2014

related IMO conventions until a few years ago.<sup>10</sup> Lastly, **ROCRAM**, which gathers South American maritime authorities, including Cuba, Mexico, and Panama's, **enables cooperation in maritime safety and control activities**. However, **offshore safety is not among its main objectives**, which results from its dependency on IMO's priorities.<sup>11</sup> With this scenario, in terms of offshore, this is a pending task for LAC's regional organizations, and there will surely be news over the next year, at the request of their own national oil partners.

## **II. Safety Procedures and Standards: the Case of “the Big Three”**

### ***II. a. The Case of Mexico***

The NOC of Mexico (PEMEX), once an advocate of the oil autarky in LAC, following an announcement on findings of crude oil in deepwaters in the Gulf of Mexico, has already stated that it will seek the technology among third parties. To achieve that step, Mexico had to change its legal framework, which will open the door to foreign capital and the technology associated with it. This is the only way to access its promising offshore reserves in deepwaters.<sup>12</sup> It is interesting to note that this announcement became effective one and a half years before a timely **agreement between Mexico and the U.S. regarding joint exploitation of reserves located in their maritime border** in the Gulf of Mexico. The agreement, signed in February 2012, sets out the conditions for American oil companies and PEMEX to explore the possible crude oil reserves that may exist in cross-border oilfields in the Gulf of Mexico.<sup>13</sup> In general, the document establishes the commitment to share the information on oilfields that may be discovered in the seabed and subsoil shared by both countries. It foresees the possibility of carrying out joint explorations, and that the exploitation be in charge of the country with the bigger oil reserve. The other country shall take the corresponding proportional part of the oilfield. This **avoids the so-called “straw effect”** by which, with the installation of platforms and pipelines close to the cross-border, one country could “suck” the crude oil from the other without previous authorization.<sup>14</sup> **The agreement also has very interesting potential regarding prevention of accidents and spills, since it requires that PEMEX accept and apply the international standards in health, safety, and the environment.** Preventive measures, procedures, and resources to be used must be submitted and available by both sides. In brief, this agreement has achieved a significant change in the Mexican oil system that enables the potential entry of the necessary know-how regarding safety, in this particular case, for offshore exploitations in deepwaters.

It would not be surprising that similar agreements were to apply in the future between these countries and other Caribbean neighbors with potential offshore reserves such as Belize, Cuba, Jamaica, or even Nicaragua. **The model could be exported outside the subregion to the South:** Argentina-Uruguay, Brazil-Uruguay, Venezuela-Colombia,

<sup>10</sup> Lacking significant progress in those countries, IMO went to COCATRAM, which has carried out training activities on oil spill control in the subregion for three years and seeks NCP improvements, with varying results. See: [www.cocatram.org.ni](http://www.cocatram.org.ni) - Last check: 02/27/2014

<sup>11</sup> [http://www.roccram.net/prontus\\_roccram/site/artic/20121123/asocfile/20121123144804/documento\\_11\\_3\\_estrategia\\_roccram\\_argentina\\_ok.pdf](http://www.roccram.net/prontus_roccram/site/artic/20121123/asocfile/20121123144804/documento_11_3_estrategia_roccram_argentina_ok.pdf) - Posted 10-14 Dec., 2012 – Author: ROCCRAM – Title: Plan de Acción de Alto Nivel y Prioridades Bienio 2012-2014 - Ed. XVI Reunión Ordinaria de Autoridades Marítimas – Last check: 02/27/2014

<sup>12</sup> [http://www.nytimes.com/2013/08/13/world/americas/mexican-president-invites-foreign-investment-in-energy.html?\\_r=0](http://www.nytimes.com/2013/08/13/world/americas/mexican-president-invites-foreign-investment-in-energy.html?_r=0) - Posted 08/12/2013 – Author: Malkin, E. – Title: In Move for Economy, President Seeks Foreign Investment for Energy - Ed. New York Times – Last check: 02/27/2014

<sup>13</sup> Agreement for the Exploration and Exploitation of the Transboundary Oilfields. Signed by Secretary of State Hillary Clinton (U.S.) and Chancellor Patricia Espinosa (Mexico) on 02/20/2012 in Los Cabos, Baja California Sur, Mexico. - <http://www.gpo.gov/fdsys/pkg/CPRT-112SPRT77567/html/CPRT-112SPRT77567.htm> – Last check: 02/27/2014

<sup>14</sup> <http://www.eluniversal.com.mx/finanzas/62759.html> - Posted 02/18/2008 – Author: Cruz Serrano, N. – Title: Indefensos ante Efecto Popote - Ed. El Universal – Last check: 02/27/2014

Venezuela-Trinidad and Tobago, Colombia-Ecuador, Peru-Ecuador, Brazil-French Guiana, or Suriname-Guyana, as examples of adjacent countries with shared maritime spaces, regarding offshore. The Dumping in Mexican Maritime Zones Act was created following Mexico's bilateral offshore agreement with the U.S. This act empowers the Navy Secretariat (SEMAR) to prevent and combat pollution in seas and national coasts.<sup>15</sup> The change of powers is no minor issue, since control had previously been assigned to PROFEPA (Procuraduría Federal de Protección Ambiental), which had difficulties in its application due to the lack of qualified teams. With this new act, SEMAR can make inspection visits to and surveillance of the oil platforms (penetrating, as in "sneaking in", if necessary, is even considered); apply sanctions; and establish the amount that should be covered to guarantee damage repair or pursue legal action in the issue. In an extreme case, it can even sink or destroy the polluting facility. There are significant implications for oil platforms in these times of exploitation in deepwaters, far from the coast. It will be necessary to create protocols of intervention with oil state company PEMEX, which somehow sees its hegemony challenged in terms of safety with the expansion of offshore exploitation in deepwaters. As a result of the above situations and due to growing environmental pressure in Mexico for relatively usual incidents, both onshore and offshore, President Peña Nieto's new government has approved the worldwide state-of-the-art environmental act (*Ley Federal de Responsabilidad Ambiental*). This act establishes that the environment shall be subject to autonomous protection and it has decentralized its application to individuals and interested organizations (such as NGOs), regardless of the ownership of the damaged asset.<sup>16</sup> It will be interesting to see how this act is applied in Mexico upon future oil spills, although it is clear that costs will rise considerably.

## II. b. The Case of Venezuela

Venezuela, with its monopolistic NOC PDVSA as flagship, has serious problems regarding safety and oil spill prevention. The country has had an expertise drain over the past decade due to the migration of its main technical staff for well known domestic political reasons—the industry in the region and a few U.S. companies, have taken advantage of this. We regard the above as the basis of onshore and its problems in terrestrial and lacustrine areas (Maracaibo Lake). However, **it also includes offshore, although the latter is not a priority for the government** while its terrestrial reserves are still formidable.<sup>17</sup> This reality did not prevent an offshore incident in Venezuelan waters less than a month after the DWH incident. **The Aban Pearl offshore oil rig, the first oil platform operated by PDVSA for offshore natural-gas exploitation, sank** two and a half miles away from the coast, sailing from Trinidad and Tobago towards Venezuela.<sup>18</sup> There were no spills and its 100 crewmembers were rescued alive; however, the importance of the incident cannot be ignored. This is not the first sinking of an oil rig in LAC in the 21<sup>st</sup> century: the serious disasters of the Usumacinta oil rig and the Kab-121 well in Mexico in 2007, as well as the sinking of the oil

<sup>15</sup> <http://eleconomista.com.mx/sociedad/2012/10/25/ejecutivo-presenta-reforma-combatir-contaminacion-mares> - Posted 10/25/2012 – Author: Staff El Economista – Title: Ejecutivo presenta Reforma para Combatir Contaminación en Mares - Ed. El Economista – Last check: 02/27/2014

<sup>16</sup> <http://www.eluniversalmas.com.mx/editoriales/2013/07/65485.php> - Posted 07/09/2013 – Author: Cossio, J. R.– Title: Responsabilidad Ambiental - Ed. El Universal – Last check: 02/27/2014

<sup>17</sup> Although this was the trend until 2012, at the moment this paper was written the author read that President Maduro's new government was beginning to arrange some offshore deals with Trinidad and Tobago, and the support of the expertise of Chevron, a multinational company that has been very active in South America in 2013. <http://guardian.co.tt/business/2013-09-12/tt-signs-gas-deal-venezuela> - Posted 09/12/2013 – Title: T&T signs gas deal with Venezuela - Ed. Trinidad & Tobago Guardian on line – Last check: 02/27/2014

<sup>18</sup> [http://www.huffingtonpost.com/2010/05/13/aban-pearl-offshore-oil-d\\_n\\_575810.html](http://www.huffingtonpost.com/2010/05/13/aban-pearl-offshore-oil-d_n_575810.html) - Posted 05/13/2010 – Title: Aban Pearl, Offshore Oil Drilling Platform Sinks Off Coast of Venezuela - Ed. Huff Post Green – Last check: 02/27/2014

rig P-36 in Brazil in 2001—both disasters with dozens of dead workers, and Mexico’s with ecological consequences—remind us of LAC’s weaknesses in procedures and offshore oil infrastructure at the turn of the century. Even with **the lack of transparency in the investigations carried out by Venezuelan authorities**, we cannot ignore the fact that the rig was 23 years old, which raises **questions about the state of oil rigs and technologies to which Latin American and Caribbean companies have access. The recent incident of the explosion of a gas tank and later burning of other oil tanks in the Amuay refinery** (August 2012), with an estimated 50 casualties and hundreds of millions of dollars in infrastructure losses, as well as the combustion of nearly 700,000 bbl of fuel and its market costs, was a sign.<sup>19</sup> This was not an isolated event, as can be verified in an independent specialized report leaked on the web, which talks about 222 incidents during 2011 at the Paraguaná Refining Center, including Amuay and Cardón. **The report was commissioned by the NOC itself**, upon request of a reinsurance company, and it has not been disproved.<sup>20</sup> The report indicated that 100 of the incidents were fires. The same document also reports that the relationship between corrective and preventive maintenance is 69% to 31%, reflecting an inversion of alarming proportions. In September 2013, the NOC submitted a summary of its research concerning Amuay. The summary described the incident: sabotage due to broken stud bolts that held a casing-landing flange, which opened and caused a gas leak. It also indicated that bolts were loosened intentionally, although it did not mention any possible responsible parties or the way in which the incident occurred. Conclusions were positive regarding all of the company’s levels during the incident. Only internal members of the company took part in the aforementioned research, and there was no participation from international experts.<sup>21</sup>

**Venezuela’s NOC has kept away from Latin America’s traditional oil technical forums since the beginning of the century.** This situation prevents its technicians from reaping the benefits of information exchange, training, and seminars, both upstream and downstream, on matters related to safety and the environment, which are the gist of industry associations. The lack of access to oil industry procedures and standards leave Venezuela in the hands of its possible exchanges with countries with which it has preferential trade relationships, such as China, Iran, and Russia. However, the NOC has numerous projects with companies in South American countries and incursions into the Caribbean with Petrocaribe. Operating in those countries requires compliance with necessary safety standards.<sup>22</sup> The aforementioned agreements with Chevron and Petrotrin to exploit offshore oilfields bordering Trinidad and Tobago, as well as several other large projects with IOCs in the Orinoco belt with outside companies suggest a positive trend in the short term.<sup>23</sup> According to our criterion, in the short term Venezuela will have no option but to open its essential NOC to increasing its activities by outsourcing processes, including certain maintenance levels, audits of their processes and, in general, to a necessary functional reorganization in the pursuit of

<sup>19</sup> <http://www.eluniversal.com/economia/120826/incendio-en-amuay-incidira-en-exportaciones-de-combustible> - Posted 08/26/2012 – Title: Incendio en Amuay incidirá en Exportaciones de Combustible – Ed. El Universal, Caracas – Last check: 02/27/2014

<sup>20</sup> <http://settysoutham.files.wordpress.com/2012/08/reporte-amuay.pdf> - Posted 03/8/2012 – Title: Risk Improvement Recommendations Update Report for PDVSA – Author: Prepared on behalf of QBE by Gregory, R. – Last check: 02/27/2014

<sup>21</sup> <http://www.pdvsa.com/interface.sp/database/fichero/publicacion/8264/1632.PDF> - Posted 9/9/2013 – Title: Evento clase A Refinería de Amuay – Author: PDVSA - Last check: 03/9/2014

<sup>22</sup> <http://www.bolpress.com/art.php?Cod=2012111701> - Posted 11/17/2012 – Title: PDVSA gestiona 122 convenios con países de la UNASUR – Author: Esquivel, M. - Ed. BolPress – Last check: 02/27/2014

<sup>23</sup> <http://www.europapress.es/latam/economia/noticia-pdvsa-repsol-discuten-financiamiento-1200-mln-dlr-sociedad-venezuela-20131017003313.html> - Posted 10/17/2013 – Title: Repsol y PDVSA discuten financiamiento de 1200 millones de dólares para sociedad en Venezuela – Author: Buitrago, D. - Ed. Notimérica.om – Last check: 02/27/2014

better effectiveness, even with the ideological component integrated. It is only a question of timing.

### *II. c. The Case of Brazil*

**The case of Petrobras is more remarkable than that of PEMEX** due to its recent investment in equipment, although this does not yet reach enough efficiency in operative responses. Nonetheless, it is clear that there are emerging efforts with the presence of specialized vessels and massive purchases of equipment, which must be sustainable over time with procedures, as well as specialized and qualified human resources. Confirming this, **Petrobras has been a member of the Subsea Well Incident Preparedness and Response Project as of 2013**<sup>24</sup> and, according to OSRL, it will play an important role with its branch in Brazil.<sup>25</sup>

**Recent spills in IOC's exploration platforms** (November 2011) in the Frade Field well (Campos Basin), **and NOC's well** (February 2012)<sup>26</sup> in Carioca Nordeste (Santos Basin),<sup>27</sup> highlighted the response speed and effectiveness of the Brazilian Contingency Plan. Oil companies in Brazil have initial differences in notification processes. They lack a smooth environmental culture because of their protection of their own corporate image; there was even some questioning of the response techniques they used. However, once the assessment stage was initiated, the magnitude and trajectory of the slick were effectively determined, which allowed for accurate dimensioning, monitoring, and surveillance. The operational response was relative in its efficiency, despite the great display of resources, in the sense that the natural degradation processes accelerated its dispersion. The consequences for this type of IOC have been costly. Its exploitation license for Frade Field well was temporarily removed after new minor spills in March 2012, which did not always have clear origins. Lastly, fines were issued in September 2013, and the company signed an agreement that could lead to the end of civil lawsuits.<sup>28</sup> **These recent offshore spills in Brazil and their judicial consequences**—which even included severe criminal claims for the main responsible parties of the operating companies found liable—, **have marked a new stage** in the way in which companies and authorities get involved in this type of incident, at least concerning IOC, which know what they are up against. **What remains to be seen is whether the authorities' criteria regarding Brazil's NOC will be as demanding, which could establish different partnership strategies for IOCs in Brazil.**<sup>29</sup>

### **III. Transparency and Incident Command System: the Necessary Adjustment**

<sup>24</sup> <http://subseawellresponse.com/2013/10/10/oil-spill-response-limited-osrl-introduces-international-well-capping-equipment-at-new-base-in-south-africa/> - Poster - 10/10/2013 - Title: Oil Spill Response Limited (OSRL) introduces International Well Capping Equipment at New Base in South Africa - Author: Subsea Well Response Project - Last check: 03/12/2014

<sup>25</sup> <http://www.oilspillresponse.com/about-us/2011-12-21-08-34-02/news/387-oil-industry-unveils-new-containment-concept> - Title: Oil industry unveils new containment concept to improve Subsea Well Incident preparedness and response - Author: OSRL - Last check: 02/27/2014

<sup>26</sup> <http://www1.folha.uol.com.br/mercado/1041834-petrobras-detecta-vazamento-de-petroleo-em-poco-do-pre-sal.shtml> - Posted 01/31/2012 - Title: Petrobras detecta vazamento de petróleo em poço do pré-sal - Author: Soares, P. - Ed. Folha de São Paulo - Last check: 02/27/2014

<sup>27</sup> <http://www1.folha.uol.com.br/mercado/1010221-mancha-de-oleo-de-vazamento-da-chevron-diminuiu-diz-anp.shtml> - Posted 11/22/2011 - Title: Mancha de óleo de vazamento da Chevron diminuiu, diz ANP - Author: Staff FdSP - Ed. Folha de São Paulo - Last check: 02/27/2014

<sup>28</sup> <http://www.reuters.com/article/2013/09/13/brazil-chevron-transocean-idUSL2N0H915U20130913> - Posted 09/13/2013 - Title: Chevron to sign Brazil oil-spill accord, may end lawsuits - gov't - Ed. Reuters - Last check: 03/12/2014

<sup>29</sup> <http://www1.folha.uol.com.br/mercado/1148817-por-r-500-mil-justica-autoriza-presidente-da-chevron-no-brasil-a-sair-do-pais.shtml> - Posted 09/05/2013 - Title: Por R\$500 mil, Justiça autoriza presidente da Chevron no Brasil a sair do país - Author: Reuters Ed. Folha de S. Paulo - Last check: 03/12/2014

### *III. a. Transparency*

LAC's reality has other particular substantive problems; one of them is **the lack of transparency among the diverse agencies involved**, which usually obstructs effective decision-making, especially within the first hours of an incident.

This takes us to a recurring situation with this type of incident, which DWH has brought to almost paranoid levels, i.e., the issue of transparency towards public opinion and media management. There is a saying in the industry: "when there is an oil spill, no direct or indirect actor comes out unscathed." The issue is not to worsen an already complicated situation by omitting or not sending the appropriate messages. These are times of instant information, so the information provided must be as well. DWH showed excellence and made history with its real-time broadcast of the oil spill, whether the responsible parties liked it or not.

Some might think that this only occurs in the U.S., but this is not the case. It happens in the EU, Norway, and now it is coming to LAC as well: in the last IOC offshore spill in Brazil, recordings and photos of the oil spill in deepwaters were also shown, which confirms the trend.<sup>30</sup> This entailed and will henceforth entail an aggregated effort, and it constituted enormous pressure for unified commands, which was exacerbated to unimagined limits with the case of DWH. Why, then, are some people in LAC—both at the business and government levels—so reluctant to presenting information on the evolution of the incident via the Internet? **The answer is of a cultural and even psychological nature, with a certain tendency to solve situations outside the procedures and response plan.** The limitation of resources and the lack of qualification and leadership could be the causes. LAC is not yet prepared for this type of openness. In its organizations and mainly in the upper ranks of the Navy and Coast Guard, it still maintains a tendency for being reserved and releasing smaller amounts of information than is advisable, with obsolete intelligence schemes for this type of public incident, which may worsen already complicated situations. However, a new generation of environmentally conscious youth is arriving to the ranks, even in LAC, and that is changing safety management.

### *III. b. Incident Command System*

The above is in part enhanced by **the Incident Command System (ICS) method, which has been adapted from the manual of the U.S. Coast Guard** and nearly unanimously adopted, even if at times the integration of unified commands is not homogenous or coherent, including in the U.S. and cases of Spills of National Significance (SONS). LAC's lack of adaptability can be more generalized. Understandable, although not justified, fear to situations that are initially out of control, and even doubts towards assuming the responsibilities assigned by contingency plans, show the insecurities of many of the responsible parties appointed. Using the ICS as a model, **contingency plans are very often filled with unnecessary people** who only hinder the decision-making process. The only rational solution to this issue would be to limit this presence to the strictly essential individuals who will attend to the emergency and give staggered access to other representatives in further stages. We agree that most of the contents of the version of the ICS model that the U.S. Coast Guard has adapted for use in this type of incident are useful and necessary. However, an **adaptation of the U.S. Coast Guard manual to the realities of**

<sup>30</sup> <http://g1.globo.com/rio-de-janeiro/noticia/2011/11/policia-federal-comecara-ouvir-funcionarios-da-chevron-nesta-quarta.html> - Posted 11/23/2011 – Title: Policia Federal comecara a ouvir funcionarios da Chevron nesta quarta - Ed. Globo Rio – Last check: 02/27/2014



**each country or region in LAC** for authority, agency, and oil company management, would be extremely useful at the time of an incident. As a starting point, we need to readapt the manual for a Latin American and Caribbean audience. The challenge of drafting the manual in technical Spanish that may be understood and assimilated by all Latin American countries is no small task. Reinterpreting the manual and eliminating unnecessary positions and resources would be an achievement that would enable it to be used effectively.<sup>31</sup> The ICS Manual even adds an Intelligence Officer to the staff of the response organization. In this situation, involved companies can manage the dissemination of information with a secretive bias that sometimes tends to deform information on the events. This can turn out to be a double-edged sword for the companies. Once an incident occurs, the damage to a company's image is already done. Companies must be capable of knowing how to disseminate these intentions in an effective and sustainable way.

#### **IV. Response Strategies**

##### ***IV. a. Net Environmental Benefit Analysis and Mechanical Recovery***

The lessons learned about the possible operational responses for this type of spill, after the massive use of resources in the DWH incident, should cause responsible parties in LAC to ponder. There is also a noticeable gap in the application of Net Environmental Benefit Analysis (NEBA). This is still a nebulous and pending matter, because of the lack of integration of environmental specialists to ICSs and appropriate technological tools, among others. The issue is applicable almost throughout LAC, with one exception: Brazil, due to its scientific participation and to the scale of problems it faces regarding deepwater offshore.

Even if mechanical recovery is the first priority in LAC, eagerness has to be mitigated. DWH showed the limitations of the incident and the traditional use of booms and skimmers of all imaginable types. **The range of mechanical recovery by the use of skimmers, which was close to 3%**, reflects the reality and the limitations of the method, whose cost-effort-return equation should be thought of in the industry.

##### ***IV. b. The Use of Dispersants***

The massive use of dispersants should be a priority strategy to consider in offshore scenarios, as its efficiency was proven in the DWH incident. However, its acceptance will vary in different countries according to the implementation policy and degree of environmental sensitivity of each country. The use of dispersants triggered environmental resistance in what was the largest application of this response strategy in the history of oil spills, even though its operational effectiveness was evident and **resulted in 8% of the total oil recovered**.<sup>32</sup> In LAC, dispersants have not always been applied in the most appropriate situations for the sensitive resources at risk, i.e., outside of the efficient temporal windows of opportunity that the strategy requires, which is always closely attached to limited logistics.

<sup>31</sup> Some multinational oil companies are making efforts to carry out a reinterpretation of the ICS Manual that suits consensual Spanish language terminology across Latin American realities. According to our sources, last year CCA-OSRL & ARPEL considered the ICS Manual and its projection for the region a key priority.

<sup>32</sup> In DWH 7,000 tons of dispersants (i.e., authorized COREXIT 9527) were used—58% on the surface and 42% under

water. [http://www.restorethegulf.gov/sites/default/files/documents/pdf/OilBudgetCalc\\_Full\\_HQ-Print\\_111110.pdf](http://www.restorethegulf.gov/sites/default/files/documents/pdf/OilBudgetCalc_Full_HQ-Print_111110.pdf) - Posted

November 2010 – Title: Oil Budget Calculator Deepwater Horizon - Ed. The Federal Interagency Solutions Group – Last

check: 02/27/2014

This was the case of the IXTOC I (1979) in Mexico. The decision-makers at the time were courageous. An incident of this magnitude was the only event that would allow the massive use of dispersants, after the Torrey Canyon disaster in 1967 and the questioned application of first-generation, detergent-type dispersants, which has nowadays been overcome. Specially made to allow aerial missions, the COREXIT 9527 used in Mexico was the first “self-mix” concentrate to be applied to oil spills. An estimated 9,000 tons of dispersants were spread in 493 aerial missions. Although it was made to interact with the marine environment, it was not appropriate to effectively deal with heavy, weathered and emulsified oils. The fact that U.S. authorities requested that dispersant not be used north of the 25<sup>th</sup> parallel north indicated the doubts that existed on the use of this type of modified hydrocarbon that could reach American shores.<sup>33</sup> The new version of COREXIT 9527 available after 1972 is even today the most widely approved and stockpiled dispersant in the world.

That pioneer experience with the use of dispersants in Mexico was not correctly assimilated in the rest of the continent. Over the past three decades, LAC has had a number of experiences with dispersants whose environmental impacts have not been accurately evaluated. Still today, LAC does not properly regulate this issue and no country expressly prohibits them. Case-by-case and previous authorization methods are the *modus operandi* and confrontations between environmental and operational authorities are ongoing. Another great innovation that the DWH experience brought was the use of dispersants in underwater sources. Its effects in the long term and what science may say about its further standardization remain to be seen. There is a long way to go before this subject is developed in LAC, although Brazil and Mexico should follow it closely, considering their risk scenarios. Moreover, regarding all strategies, but especially **for the correct use of dispersants, LAC must substantially improve valuation through NEBA, which entails adding scientists to unified commands.**

#### *IV. c. In-situ Burning*

The successful application of in-situ burning in DWH has marked a before and after in this response technique, so far barely referenced in LAC's NCPs. In fact, **it had never been applied in LAC**, so there was no experience in the matter. In DWH it was used on a never-before-seen scale: **more than 400 burnings** that, according to official numbers, **enabled the control of 5% of the spill.** With the aggregate value of being the most effective offshore response strategy in its cost-benefit relationship, DWH proved that in-situ burning has to be rewritten in its procedures and standards, because existing application schemes and even logistical and safety schemes are obsolete. In-situ burning was practically a military operation in its application, at least from the point of view of the operational responsible parties in LAC. **After the DWH incident, it became a feasible response strategy that exclusively uses human and logistical civil resources,** which will facilitate an effective response to offshore emergencies in the future. Now, in-situ burning appears more simplified regarding its method of combustion, contention schemes and even effectiveness, with safety at the forefront. Therefore, relevant **companies with specialized know-how in in-situ burning shall be put in place in each country or subregion, while awaiting news from OSRL,** as well as the adaptation of its offshore response for in-situ burning in LAC.<sup>34</sup>

<sup>33</sup> [http://pediaview.com/openpedia/Ixtoc\\_I](http://pediaview.com/openpedia/Ixtoc_I) - Posted (Not dated) – Title: Ixtoc I - Ed. PediaView.com – Last check: 02/27/2014

<sup>34</sup> Mabile, Neré - The Coming of Age of Controlled In-Situ Burning. Paper to Interspill 2012. BP America. 12/01/2012 – Last check: 03/12/2014 - Web: <http://www.interspill.com/previous-events/2012/15->

#### *IV. d. Oil Spill Response Organizations*

With these strategies in mind, we infer professional requirements regarding operations. It is no secret that **the number of private Oil Spill Response Organizations (OSROs) that provide response and act to prevent small and even medium-sized oil spills and contingencies has increased.** In LAC, doomsday scenarios may be covered by regional cooperatives such as CCA-OSRL, bilateral agreements such as that between Mexico and the U.S., or even proprietary resources and joint ventures in the future as is the case with the NOC of Brazil. However, there is a different trend regarding small and medium-sized spills that require immediate mechanical resources. DWH should be a catalyst for new private undertakings and investments in the contingency response services sector. **OSROs have not been easily accepted in LAC's market, especially due to the resistance of maritime authorities,** which are confused about their roles. Authorities must exert control, apply fines and enforce laws and regulations regarding safety in a professional manner and providing assurance to the entire sector, while leaving operational response tasks to the private sector and OSROs, as is done in the developed world. **The offshore industry understands and prefers clear rules, which have more rational costs than those of uncertain scenarios.** A key Latin American oil organization like ARPEL could study this in the near future.

#### **CONCLUSION:**

Summarizing, the following are situations that have been mentioned above:

- *Substantial increases in offshore safety problems in deep and ultra-deep waters*
- *Acknowledging confusion between maritime authorities and the oil industry concerning safety*
- *Solving situations outside procedures and response plans*
- *Adapting NCPs to offshore situations*
- *Changing the ICS model concerning LAC's realistic possibilities*
- *Reviewing offshore strategies, especially in-situ burning and dispersants*
- *Supporting regional organizations with effective tools*
- *Bridging differences between IOCs and NOCs concerning safety in LAC*

Recommendations are made regarding deepwater offshore drilling in LAC:

- *Improving risk management practices (U.S., EU and Norway models)*
- *Improving transparency through websites, public information, NGOs, etc.*
- *Positioning OSRL in the region through its merger with CCA for an improved Tier 3 offshore response*
- *Consolidating the role of OSROs for Tiers 1 and 2*

- *Increasing participation of environmental authorities*
- *Creating new concessions contracts models for offshore safety concerns in LAC*

If there was any doubt about LAC being on the offshore stage, especially regarding deepwater, it was dispelled when **the concession of Brazil's Libra oilfield** was granted to a consortium of companies including Royal Dutch Shell plc ("Shell"), Petrobras, Total, CNPC, and CNOOC from China, to develop pre-salt oil located in Santos Basin, offshore Brazil.<sup>35</sup> The consortium was intelligently assembled with very well balanced shareholders. Chinese companies provide the capital and are net oil importers, European companies contribute with their know-how and expertise, and Petrobras ensures Brazilian sovereign presence over its resources. Any catastrophic scenario shall be assimilated by consortium shareholders according to their corresponding share. Many interests and potential pressure are at stake, but **the presence of Brazil's NOC, which ensures the country's economic interests, will imply that any action authorities take towards potential incidents will also affect the flagship NOC.** Two days after the concession was granted Brazil announced NCP regulations in the event of catastrophic scenarios that cannot be fully handled by responsible parties. This new NCP is the first of its kind in LAC. It delegates responsibilities that were centralized, determines measures to minimize risk, defines the creation of a system to monitor the spill and other offshore incidents in real time ("Sisnóleo"), emphasizes and earmarks training resources, and raises fine amounts. This political statement that surely sought to placate environmental concerns shall be approved by the Presidency.<sup>36</sup> Rather than an issue between companies, these extreme scenarios are and will be an issue for states that should support and integrate response efforts within their capabilities, which are always limited by the resources and technologies of their own responsible organizations. **LAC presents an interesting model to be considered in the future, taking into account offshore safety issues.**

- *Implementing qualitative training and cooperation between companies and authorities*

**Cooperative management on offshore emergencies would allow all parties to help oil companies**, instead of just blaming them and chasing after them in the middle of the incident. There is a well known recipe for this: **promoting offshore information seminars, trainings, and regular exercises related to safety and prevention** with the interaction of all actors and, especially in LAC, with the participation of Environmental Authorities (ARPEL). ROCRAM urgently needs to prioritize offshore issues in LAC, using similar strategies to, for example, REMPEC's dynamics in the Mediterranean Sea. This type of forum enables IMO's interaction with the oil industry. For this purpose, the International Association of Oil & Gas Producers (OGP) has established the Global Industry Response Group to work out rational offshore safety measures. **Stronger ties between ARPEL and ROCRAM-COCATRAM would greatly benefit LAC.**<sup>37</sup>

One of LAC's problems with risk scenarios such as oil spills is that we do not tend to document experiences in writing. The above considerations seek to incite the reaction and

<sup>35</sup> <http://marnews.net/brazil-gave-the-concession-of-libra-oil-field-to-consortium-lead-by-petrobras/> - Posted 10/21/2013 – Title: Brazil gave the concession of Libra Oil Field to consortium lead by Petrobras – Author: Filipova, V.- Ed. Maritime News – Last check: 02/27/2014

<sup>36</sup> <http://oglobo.globo.com/economia/plano-de-contingencia-contra-vazamentos-de-petroleo-em-alto-mar-tera-monitoramento-em-tempo-real-10486586> - Posted 10/22/2013 – Title: Plano de Contingência contra vazamentos de petróleo em alto-mar terá monitoramento em tempo real – Author: Fariello, D. - Ed. O Globo – Last check: 02/27/2014

<sup>37</sup> <http://www.rempec.org/rempecnews.asp?NewsID=278> - Posted 12/10/2013 – Title: Workshop on Regional Response Capacity and Co-ordination for Major Oil Spill in the Mediterranean Sea – Ed. REMPEC – Last check: 03/12/2014

comments of those who have experiences contained in LAC. We acknowledge that there is a lack of focused knowledge and training among the main stakeholders in these incidents regarding the management of each response. Added to this, there is a need to standardize communications among actors. Systems and procedures must be tested rigorously and periodically to avoid their inappropriate and inefficient use, which can be catastrophic in deep-sea offshore cases. We do not believe this to be an issue concerning “Latin culture” and its deferral to assimilate appropriate oil practices that are widely used worldwide. The event with Chile’s miners, who were saved *in extremis* through efficient decisions and resources put in place in a very short time, reminds us that efficiency is a possibility in LAC; even we recognize that offshore scenarios, especially in deepwaters, are extremely difficult. No Latin American country will be a stranger to these facts; their **oil industries will have to abandon their *status quo* and catch up with the issues of industrial prevention and safety** in offshore. In this globalized day and age, the instant information era, the Deepwater Horizon incident has been the appropriate catalyst.