Egypt's Oil Spill Preparedness

In June 2010, the largest oil spill in Egyptian history occurred, polluting approximately 160 km of North Red Sea coastline. Known as the Jebel al-Zayt oil spill, the disaster mobilized a rapid clean-up campaign, informs University of Oxford energy expert Justin Dargin, which cleared approximately 90% of the resort-populated beaches within five days. The swiftness of response was seen as a success, however, the environmental disaster highlights the elevated risks surrounding the transport and exploration of oil in Egypt's waters, which accordingly demands a higher level of preparedness and prevention. Egypt Oil & Gas Newspaper looks at the systems in place to protect Egypt's waters in the Red Sea, the Mediterranean, and the Nile.

By Lily Leach

The Egyptian coast extends more than 3,000 kms along the Mediterranean and Red Sea with an Exclusive Economic Zone (EEZ) spanning 82 nautical miles in the Mediterranean Sea and 65 nautical miles in the Red Sea. The burgeoning economic development Egypt has experienced over the past few decades has seen the expansion of marine oil exploration projects and the growth of coastal tourist resorts such as Sharm el-Sheikh and Hurghada. This development, along with the strained capacity of the Suez Canal ports permeated by approximately 18,000 vessels annually — the majority of which are oil tankers or carrying other hazardous chemicals — is leaving Egypt's waters at greater risk than ever before. According to Dargin, "there is a significant disparity between the growth of oil related infrastructure and the ability of the government to adequately respond to chemical and oil spills that could occur in some of the most ecologically sensitive areas." The expert added that one of the main challenges Egypt faces related to oil spill preparedness "is how to protect the Red Sea and Mediterranean coasts that are home to numerous animal and plant species that are not found elsewhere."

Environmental Legislation and International Accords

Egypt's main legislation regulating marine shipping and oil exploration is its environmental law; Law Number 4 was established in 1994 and includes some restrictions to reduce oil spills risks and other pollutants from ships and oil exploration, prohibiting national and foreign vessels from discharging oil and other pollutants into the EEZ of Egypt.

The stakeholders of Egypt's environmental law are the Egyptian Environmental Affairs Agency (EEAA), the Egyptian Marine Safety Agency, the Suez Canal Authority (SCA), the Port Authorities in Egypt, the General Egyptian Organization for the Protection of the Coast, the Egyptian General Petroleum Corporation (EGPC), the General Department of Surface Water Police, the Tourism Development Authority, and other agencies designated by a Prime Ministerial Decree. Oil spill preparedness, prevention, and response are a joint venture of the stakeholders.

"We have a good relationship with all stakeholders under the umbrella of EEAA, related to [Egypt's environmental law] and the oil spill contingency plan. All stakeholders have responsibilities to prevent and reduce oil spills," said Captain Mahmoud Ismail, Operations Manager for oil spill response centers (OSRCs) in Petrosafe — a subsidiary of EGPC, its only 100% subsidiary specializing in health safety and environment services (HSE) — citing cooperation with the Egyptian Authority for Maritime Safety, who monitors shore reception facilities and all shipping vessels entering Egyptian ports, as a positive example of effective communication and regulation.

However, according to a representative from the International Environmental & Marine Services (IEMS), "One of the challenge points [for Egypt's oil spill preparedness] is the cooperation between the stakeholders of the National OSCP with the response companies, as they should build an memorandum of understanding (MOU) with responders available within Egypt and add all MOUs to the plan as an annex." A report by Hazem M. Bashat of the EEAA recognized that "Challenges to take forward necessary action at all response levels to ensure efficiency of application of the NOSCP are enormous."

Egypt has also signed most of the International Maritime Organization (IMO) Conventions including MARPOL 73 and 78 (pollution prevention), and OPRC 90 (pollution response), in addition to various regional and sub-regional agreements.

Despite the fact that Egypt has signed several of these accords, Dargin believes there are still major issues hampering sincere alignment with global best practices. "[Egypt] is hobbled by a heavy-handed bureaucracy, corruption and lack of financial resources," he says, while acknowledging that "Egypt does attempt to adhere to international standards, and has come a long way in doing so, but there are still severe shortcomings. Egypt compares favourably with other African oil producing countries that are much more recent oil producers and have more endemic management and economic problems. However, it is important to remember that even in the best prepared countries, such as the US, a major spill is not a simple affair to manage."

Contingency Plans

Egypt initiated a national oil spill contingency plan (NOSCP) in 1989 — standard for oil-producing nations — to cover various oil spill scenarios and how to identify, analyze, assess, and act on them.

Every oil company also has their own local contingency plan, which is activated in the event of a low-scale oil spill known as a "Tier One," while medium-level oils spills — Tier Two — fall under a regional OSCP. All Egyptian ports also have contingency plans. In the event of a Tier Three oil spill, or an environmental crisis, the NOSCP is used. Petrosafe responds in the event of a Tier Two and Three. Should a Tier Three occur, it is the responsibility of the EEAA to coordinate the response, and help could also come from neighbouring countries. A Tier Three oil spill has yet to occur in Egypt.

"While Egypt does have a National Oil Spill Contingency Plan (NOSCP) it is not anywhere able to effectively manage the sheer scale of drilling activities and tanker transit. This is especially poignant as these activities often take place near the environmentally sensitive coastal areas. As a result, Egypt is quite unbalanced between its exposure to spills and its preparedness. The NOSCP is not effectively integrated and lacks a strong tier response system," says Dargin.

"During the last ten years, Petrosafe faced more than 50 oil disasters in Egypt. Our lesson was to upgrade our capabilities — we have plans to upgrade pollution equipment. Preventative maintenance is our duty and our daily routine," said Ismail.

In the event of an oil spill, Petrosafe (which has an Emergency Operations Room ready 24/7) designates one of the centers to deal with it. Surveyors are sent to the affected areas, and according to the survey, Petrosafe initiates a clean-up plan that the EEAA then ratifies. Afterwards, there is an investigation to find out which company caused the spill and this company has to pay the costs related to the spill post-facto. Since the exact composition of oil depends on the formation it has been derived from, it is not that difficult to prove which company caused the spill — EGPC has a footprint for every sample of oil. Oil spills originating from a ship results in the arrest of the vessel, which is not permitted to leave Egypt before a promise to pay expenses has been established.

However, the Egyptian government enraged environmental groups when the government claimed they were unable to determine the source of the Jebel al-Zayt oil spill, which is still unknown. The Ministry of Petroleum suggested that the leak could have originated from a passing tanker in the Gulf of Suez, sabotaged rig equipment, or rocks erupting from one of the islands, reported Bloomberg. The accusations of a cover-up point to a lack of transparency in the industry, which some experts consider as Egypt's major shortcoming related to oil spill preparedness. IEMS cautions that lack of transparency discourages private investment, which is "compounded by the fact that the entire oil and gas preparedness regime is fragmented and often led by the potential polluters," adding that "This is a national issue and independent private sector impartial response companies should be consulted."

That Egypt's coastal regions nervously share two of its largest industries — tourism and oil exploration — with one threatening disastrous effects over the other, could explain the government's particular lack of transparency on this issue, according to Dargin. "Egypt, because it depends so much on tourism revenue, has a desire to cover-up any spills that occur so that its tourism industry is not impacted. This is a weakness and challenge that must be overcome," he said.

Oil Spill Response Centers

The oil spill response centers (OSRCs) across Egypt, located along the Red Sea and the Nile, were established to house and maintain preventative and response equipment. In 1989, EGPC built the first OSRCs, initially operated by the regional petroleum companies, and are now all operated by Petrosafe.

EGPC owns six oil spill response centers in different regions of Egypt, four marine centers and two along the Nile. The four main bases are located in Hurghada, Ras Gharib, Suez, and Alexandria.

The latest center on the Nile opened just at the beginning of this year. The seventh center is being established at el-Thor in Sinai. EGPC is responsible for any oil spill that may occur, and instructs oil companies to fight oil spills. EGPC conducts quarterly audits for the centers.

There are approximately 150 employees to cover all of the centers, each base staffed by a team of 16 persons per shift, compiled of engineers, technicians, and logicians, 80% of which have over ten years experience in oil spill preparedness, and are continuously receiving training, informed Eng. Emad Abdel Razek Hassan, Assistant Chairman for Operations at Petrosafe. Dargin considers Egypt's "extremely educated engineering labor force" one of its main strengths in oil spill preparedness.

The cabinet assigned the Ministry of Petroleum to establish the new centers on the Nile in an attempt to meet the growing risk for leaks, as the Nile is also used for transportation. The Chairman and Managing Director of Petrosafe Magdy Fahmy Moustafa cited EGPC's and Petrosafe's efforts to protect the Nile as the most important issue for oil spill preparedness for Egypt.

The high risk related to an increase in shipping vessels has motivated a surge in equipment purchases within the last two years, included under EGPC's budget. "EGPC has three budgets to upgrade the centers. The first part of the budget has arrived and the second phase is tendering," informed Hassan.

In addition to OSRCs, there is emergency mutual aid for marine pollution located in Hurghada to coordinate with other Arab countries in the Red Sea to face marine casualties, and the Arab Academy for Science and Technology and Maritime Transport under the Arab Union in Alexandria.

Conclusion

Four times a year there are oil spill emergency exercises taking place, attended by EGPC, IOCs and Egypt's marine force. "Saudi Aramco in 2011 staged a major exercise Ra Atum VII to test the response to a major incident in Egypt involving Saudi Aramaco. A considerable amount of money was invested into the exercise with Saudi Aramaco and most, if not all, Egyptian oil and gas companies attended the event. Lessons learned were developed and shared with both government and industry, illustrating the strengths and weaknesses of oil spill response in Egypt; however, there has been no action taken on the lessons learned to date," informs IEMS.

The next exercise hosted by Petrosafe is to take place in Ras Shokeir this June, which will simulate a certain volume and area of contamination, and measure the response and reaction from every company at the drill. Invited to the exercise is the EEAA, Petrosafe, the Arab Academy, and neighbouring companies in the area such as BP and Shell, with GUPCO acting as the main host, informs Hassan.

These oil spill simulations, Dargin believes, "along with the several international accords on marine protection and oil spills that Egypt has signed, have granted Egypt somewhat of a proactive stance just in case a major spill does occur." IEMS also acknowledges that "The Egyptian ranking in regards to compliance with international standards has improved; however, awareness, compliance, and investment must be reflective of the growing risks Egypt is facing due to heightened exploration and aging oil fields together with the aging pipeline/storage infrastructures."