

JOINT SAUDI ARAMCO / PAJ OIL SPILL EXERCISE

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by **Saleh O. Balawi**
Superintendent
Saudi Aramco

Oil has a great significance to the economy of the world. It is a vehicle for international trade and a major source of income for producing countries. Millions of workers are employed around the world in the oil industry. Oil is the prime feedstock in the petrochemical industry. It is also the main source of energy to industries, such as factories, power and desalination plants. However, there is no sector more dependent on oil than the transportation sector.

The overwhelming majority of oil produced in the Arabian Gulf area is transported by sea to the far reaches of the globe, all the way to the Far East, Europe and the Americas. Among the major markets for the oil of the Gulf Region is Japan.

As the world's largest oil producing and exporting country, Saudi Arabia accounts for a significant percentage of the oil transported by sea worldwide. In line with its leadership position, Saudi Aramco ensures the safe and efficient handling of this valuable resource.

Since oil is carried mostly by sea to the eventual consumer, Saudi Aramco faces the added task of protecting the most vital resource of all, water. In a region where water is scarce, the sea is not only a source of food and a means of livelihood and recreation for coastal residents, but also a source of drinking water supply.

While Saudi Aramco emphasizes the prevention of oil spills, it also acknowledges that oil spills can occur. In order to effectively respond to oil spills, Saudi Aramco has, in place, oil spill contingency plans that guide the response effort. To carry out these plans, the Company has stocked oil spill equipment at strategic locations throughout its operating area, supported by a well-trained team that stands ready to combat oil spills wherever might they occur.

Oil pollution control equipment is staged at both The Arabian Gulf and The Red Sea. Equipment includes pollution vessels, boom, skimmers, storage barges, aerial and sea born dispersant systems. Saudi Aramco has two fixed-wing aircraft dedicated for aerial dispersant application.

In addition, Saudi Aramco has access to the oil spill equipment of the Petroleum Association of Japan and the help of other oil companies in the area that are members of the Gulf Area Oil Companies Mutual Aid Organization (GAOCMAO).

For oil spills outside the Gulf region, the company has membership in major oil spill cooperatives such as Oil Spill Response Limited (which also has an alliance with East Asia Response Limited in Singapore). In the Western Hemisphere, the company has membership in Clean Caribbean Cooperative (CCC) for the Caribbean and Gulf of Mexico. For U.S. waters, the company also has membership in Marine Preservation Association, which has oil spill equipment as part of the Marine Spill Response Corporation.

THE EXERCISE

The idea of holding a joint exercise between Saudi Aramco the Petroleum Association of Japan was the result of natural progression. When the PAJ began to implement a major oil spill program in 1991, they established equipment stockpiles along the route of oil from the producing countries in the Gulf to Japan. The PAJ was eager to spread the word to the international community about the availability of this equipment for oil spill response. In the Gulf area, the PAJ established a stockpile of oil spill equipment in Khafji in 1994, under the custody of the Arabian Oil Company, followed a year later by one in Abu Dhabi.

In the years that followed, the PAJ was involved in the response efforts to combat some of the largest oil spill incidents to have occurred in Asia. Among these spill incidents were the *Sea Prince* incident in Korea in 1995, the *Evoikos* spill in Singapore in 1997 and the Pontoon 300 incident in the United Arab Emirates in 1998, in addition to their involvement in the Nakhodka incident in Japan in 1997.

With such experience and resources made available free of charge, the PAJ has established itself as a reliable partner in any effort to combat major oil spills.

The PAJ and Saudi Aramco have been involved in several joint appearances at international oil spill related conferences and seminars. They began working on developing a joint oil spill exercise in the last quarter of 1998.

For Saudi Aramco the objectives of the exercise were as shown above. These objectives are:

- To test Saudi Aramco's ability to incorporate the oil spill resources (equipment and personnel) of an outside agency (in this case, the PAJ) in its response to a major oil spill incident. Saudi Aramco's oil spill response team and the PAJ team were under the command of Saudi Aramco regional oil spill coordinator for the Arabian Gulf.
- To test the regional oil spill contingency plan for the Arabian Gulf. In that plan, there is a provision to call upon the oil spill resources of the PAJ in Khafji and Abu Dhabi when needed
- To test the time and other factors associated with bringing the paj equipment from Khafji to the oil spill site.
- Work together with the PAJ, Arabian Oil Company and other agencies involved and learn as a group. The lessons learned would then be used to update our plans and modify our response strategies, as needed.

The exercise scenario was developed by PAJ a consultant, Mr. Andrew Crawford of Water born Environmental Limited. The exercise scenario called for an oil spill involving a tank rupture in a Vela vessel during loading operations at Ju'aymah Terminal, which is located about 10 kilometers north of the main terminal at Ras Tanura. In addition, the scenario called for a hose rupture at the loading arm in the terminal, with the combined total amount of oil spilled coming to about 70,000 barrels. The resultant slick would then hit the shoreline and spread offshore near the main Ras Tanura Terminal. Ju'aymah has a major power generation plant at nearby Ghazlan, which would have to be notified to protect its water intake. The Ras Tanura Refinery water intake would also be affected. This amount of oil spillage is higher than the rated capability of Saudi Aramco's oil spill equipment in the Ras Tanura area.

Saudi Aramco's oil spill response team assembled at the designated disaster control center in Ras Tanura to assess the situation and determine the level and type of response needed to tackle the incident. After an initial assessment of the spill, Saudi Aramco determined that it would call upon the assistance of the PAJ to combat this spill. We took into consideration several advantages. Some of these advantages are:

1. The Khafji stockpile is only 280 kilometers from Ras Tanura. Khafji is on the main Saudi Arabia-Kuwait highway and can be reached by road and by sea. It is also within the national boundaries of Saudi Arabia, making it one of the few major oil spill stockpiles outside of our own that will not need customs clearances for cross-boundary trans-shipment.
2. The PAJ has stocked equipment that is similar to that of Saudi Aramco. Our own oil spill response team is familiar with that type of equipment and can deploy it.
3. Saudi Aramco's oil spill contingency plan includes a provision for requesting the oil spill equipment of the PAJ. We have a list of the equipment at both Khafji and Abu Dhabi in the plan.
4. The PAJ equipment is free of charge, so long as it is returned intact after use.

The Saudi Aramco team came up with a plan to assemble the needed personnel both at the site of the spill and in the disaster control center. Communication was maintained with the Company's upper management, represented by the Oil Spill Committee, which oversees the overall oil spill activities for Saudi Aramco.

Saudi Aramco's Regional Oil Spill Coordinator for the Arabian Gulf commanded the response team. The team represented several disciplines in oil spill response, including planning, command, logistics, field deployment, communication, documentation, public relations and the environment, as well as liaison with local authorities.

The field deployment segment took up the major portion of the two-day exercise. Saudi Aramco, PAJ and AOC personnel worked together to deploy the Saudi Aramco and PAJ equipment.

On the first day, aerial dispersant application was carried out using two fixed-wing aircraft. Strong winds and high seas prevented the deployment of any other equipment. On the second day of the exercise, the deployment continued, using a total of four pollution vessels. The operation included boom deployment, followed by the lowering of a skimming system that included a pump, and a storage vessel.

As always, safety of personnel was the top concern. One of the pollution vessels was dedicated to emergency evacuation, bringing back to shore any personnel who might be injured during the exercise. At the pier, an ambulance with its own driver and emergency medical personnel was put on stand-by to receive any emergency cases.

The lessons learned from this exercise are many. Among the lessons learned I, will highlight the following:

- The PAJ equipment in Khafji is usable, in good condition, and best of all easily accessible, with minimum procedural hurdles to overcome before the equipment is on its way to the oil spill site.
- The PAJ has demonstrated its reliability as a partner, both in providing the necessary equipment and the support of experienced professionals to help combat major oil spill disasters.
- Saudi Aramco and the PAJ/AOC team worked together very well. The exercise proved that such a team could be formed. Teamwork is vital in order to combat an oil spill of this magnitude effectively.

In summary, Saudi Aramco and the Petroleum Association of Japan have worked together in planning and conducting a successful oil spill exercise that tested several aspects and disciplines in oil spill response.

We hope that we can continue to rely on the assistance of the PAJ in preserving our precious resources in the Arabian Gulf and beyond.