Interspill 2022 – Call for Papers – *Extended Abstract (500-1000 words)*

Topic: Crisis and Incident Management

Paper title: Lessons learned from the response to the 2019 oil spill that has impacted Brazilian Northeast Coastline in 2019 – Operational and Crisis Management aspects

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Abstract:

In September 2019, a large spill of unknown origin oiled around 3.000km of Brazilian coastline, impacting sensitive resources, such as mangroves, reefs, river deltas, among others. The National Contingency Plan was activated, and public and private resources are mobilized under Federal Government coordination. Therefore, Petrobras, the Brazilian state-owned energy company, was requested to provide response in the most complex and sensitive locations.

Initially, there was no information about the possible source of the incident. This delayed the response to the incident since Brazilian legislation did not indicate the roles of both Government and Entrepreneurs in unknown origin spills. Although the federal decree that regulated regional plans to be developed in areas with multiple installations and companies predicted that these structures should respond to such an event, they only exist around ports and were not prepared to engage a large spill at sea. Nowadays, in 2022, a regional plan for offshore Campus basin is still in development and has not yet been approved. Consequently, the initial mobilization was slow and very dispersed among different stakeholders, such as municipalities, State and Federal Governments, the Military, and the civil society.

Once this mobilization initiate, however, the scenario evolved quickly, especially with media coverage and the increase in the political temperature around the response. This was especially strong through the crisis committees established in each State and at Federal level. Even in the first days after the activation of Brazilian National Contingency Plan (NCP), the command chain was still confused, with different authorities issuing simultaneous orders and requests to the Company.

Thus, in order to cope with the challenge and try to provide as many aid as possible, the Company mobilized a significant response structure:

- 200 people were gathered at its command center in Rio de Janeiro, which were responsible for executing the planning cycles and developing incident action plans (IAP) for each operational period;
- 25 Environmental Defense Centers (CDA, in Portuguese) with specialized human and material resources were activated all over Brazil, demanding a complex logistic mobilization through air, water and land;
- 1.700km of coastal waters were monitored by helicopters and oil spill response vessels, especially in ecological hotspots such as Fernando de Noronha, Abrolhos and Costa do Coral national parks;

- 600km of coastline were cleaned along three months of mobilization, including pristine areas of mangroves, estuaries, and other sensitive areas, many in remote locations;
- Around 2.500 people were direct or indirectly engaged in the response at Company's request;
- Hundreds of samples were collected at field and analyzed in Petrobras Research Center, CENPES, in Rio de Janeiro, for fingerprint and environmental data;
- Dozens of technical specialists were mobilized to support the Federal response effort in different knowledge areas: modelling, monitoring, wildlife rehabilitation, communication, digital data management, logistics, among others.
- More than 3.000 people were directly trained at how to respond and to protect themselves when engaging in cleanup activities, including military, environmental agencies and municipalities' representatives, voluntaries, among others.
- Hundreds of thousands of personal protective equipment (PPE) kits were distributed to the population and other response parties through all the cleanup stage.

In terms of operational challenges, different techniques and equipment were adapted and tested with different degrees of success, to proper respond to a weathered heavy oil, which navigates under the sea surface. Fish nets were sawed to containment boom skirts to provide additional protection at estuaries mouths, deflecting the oil to calm water where it would be manually and, sometimes, mechanically recovered. Mechanical and manual cleanup guidance were provided, although other technical reference parties, such as ITOPF, helped in these discussions. Protection of sensitive areas in remote locations was performed under unfavorable conditions, such as strong currents (around 4-6 knots) and tides (up to 8m), which demanded extensive planning of how to best deploy response resources. Finally, the engagement of volunteers and local communities posed a huge challenge to keep operations safe, since millions of Brazilians joined the cleanup efforts of beaches and other sensitive areas, many without the adequate PPE and not knowing exactly how to deal with the hazardous material.

Wildlife concerns were also significant. Therefore, dozens of specialists responsible for Petrobras Beach Monitoring Program, a routine initiative that consists of monitoring the coastline and aims at collecting and compiling wildlife data to assess the environmental impacts of oil and gas production activities, were mobilized to rehabilitate sensitive species such as marine birds, sea turtles and mammals. Technical facilities hired by the Company and some mobile rehabilitation units were mobilized from CDA to wildlife hotspots and NGO' facilities, providing the means for other groups to proper engage the impacted and oiled animals.

In terms of crisis and incident management, all efforts needed to be coordinated with Federal, State and Local authorities, including the Military. Although a central command was established, each state constituted its own command hierarch with its own decision-making process, demanding significant coordination to properly respond to Government's demands. Therefore, the Company has sent liaisons to different cities and established a coherent information network among its own response structures and the Governmental focal points, thus increasing the communication and operations efficiency.

After the event, opportunities to improve the response and preparedness process in Brazil were identified:

- Digitalize and integrate data at public platforms and websites, providing better transparency and supporting mutual aid or response cooperation between different parties in the future;
- Update and integrate environmental and social databases, such as MAREM, the which is managed by the Brazilian Petroleum Institute (IBP) and used to develop response plans in Brazil;
- Increase the capability of providing guidance and training to Governmental representatives, technicians, and public in case of a large-scale spill;
- Consolidate SCAT and SIMA as national standard approaches to respond to large oil spills, establishing procedures and providing training for the technical community;
- Improve the voluntary management and the communication strategy aimed at local communities which may have contact with the oil;
- Develop and publish technical guidance in public websites;
- Stimulate an emergency response culture in public and private sectors;

In this way, this paper aims at presenting the experience gathered and at indicating opportunities to improve Brazil's response capability to major oil spills.