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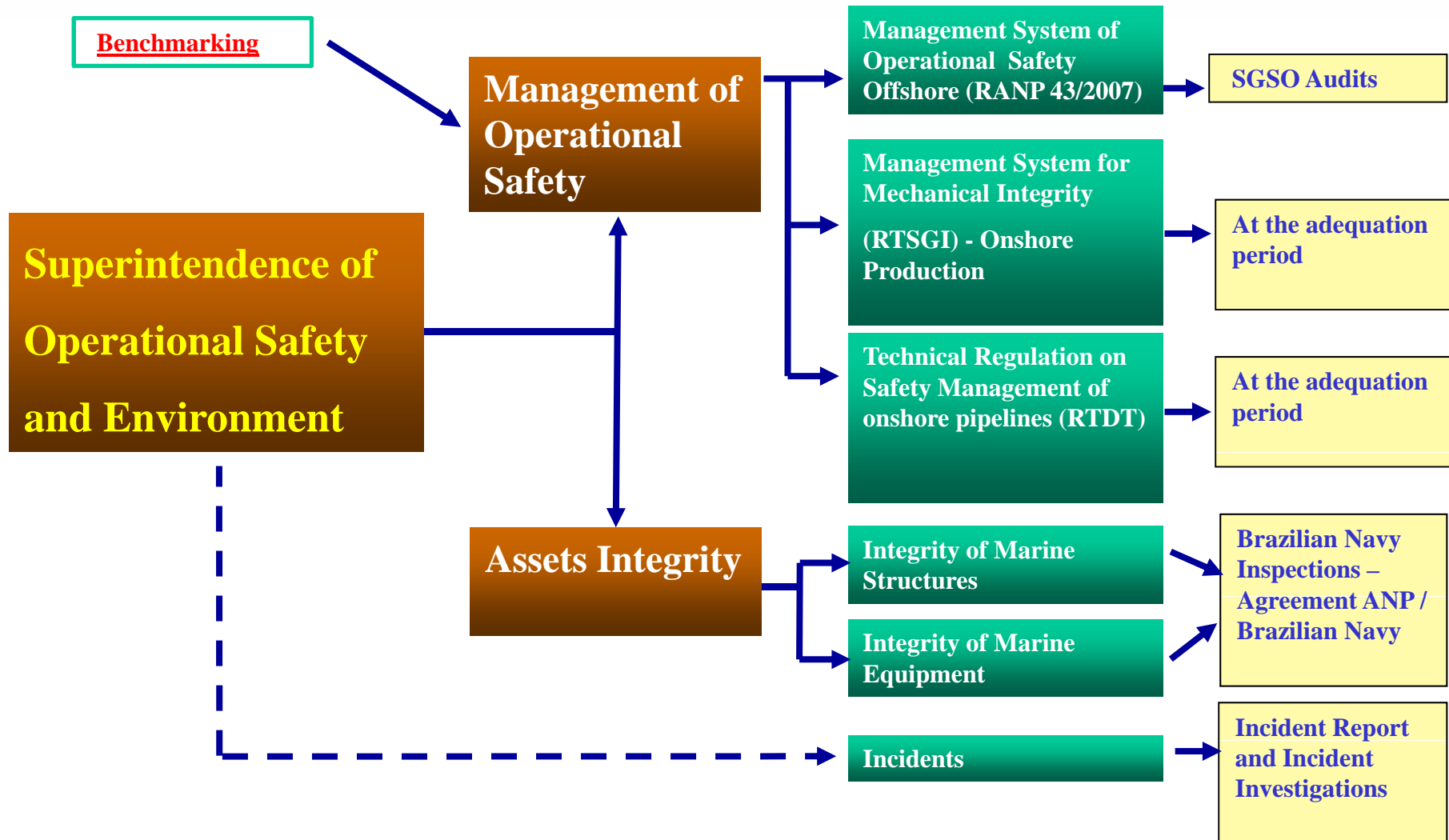
Brazil's Regulatory Experience

Safety as Priority in the Offshore Industry



**THE NATIONAL AGENCY OF PETROLEUM,
NATURAL GAS AND BIOFUELS**

Madri, June 13th 2013



Focus on Safety Management Systems!!!

Regulatory Framework for Offshore Safety

- **Performance-Based/Goal Setting Model**
- **Fewer prescriptive requirements (Qualification for the Regulatory Body is essencial)**
- **Non-restrictive approach to technological innovations**

“Minimum” requirements for: *Mechanical Integrity, Risk Assessment, Contractors Selection, Internal Audits, Incident Investigations, Management of Change, Safe Working Practices, Safety Critical Elements Management, Simultaneous Operations etc.*

Management, Leadership and Personnel

- MP 1:** Safety Culture and Managerial Commitment & Responsibility
- MP 2:** Personnel Involvement
- MP 3:** Personnel Qualification, Training and Performance
- MP 4:** Work Environment and Human Factors
- MP 5:** Contractors Management
- MP 6:** Continuous Improvement and Performance Monitoring
- MP 7:** Audits
- MP 8:** Information and Documentation Management
- MP 9:** Incident Investigation

Facilities and Technology

- MP 10:** Design, Construction, Installation and Decommissioning
- MP 11:** Critical Operational Safety Elements
- MP 12:** Risk Identification and Analysis
- MP 13:** Mechanical Integrity
- MP 14:** Management of Major Emergencies

Operational Practices

- MP 15:** Operational Procedures
- MP 16:** Management of Change (MoC)
- MP 17:** Safe Working Practices and Control Procedures in Special Activities

- Carry out the analysis of the **Operational Safety Documentation** – beginning of operation is allowed if ANP approves it;
- Carry out **audits** at the installation to verify the performance of the Operational Safety Management System (Risk Assessment is essential);
- Carry out **inspection of critical elements** for operational safety – Practice 11;
- Put into effect **injunction actions** when found non-conformities regarding the Technical Regulation .



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Risk Assessment

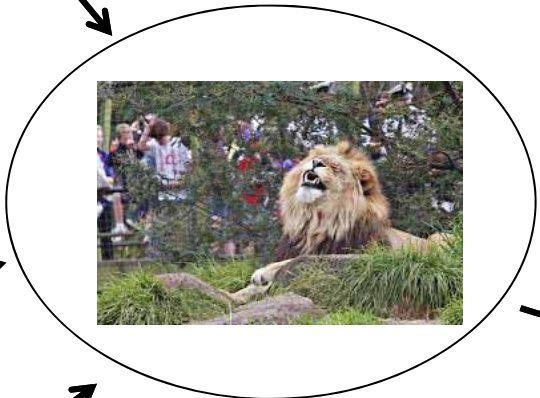
The only way to eliminate the hazard is abandoning the activity. As such a decision is not the appropriate solution for a company, especially in the oil and gas, we need to develop tools to evaluate the classification of risks, defining points until they are acceptable, and evaluate alternatives which can be used to reduce them, control them or mitigate the consequences of a possible accident.



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EXAMPLE OF RISK ASSESSMENT LITTLE GIRL IN THE ZOO

**2 DOORS (BARRIERS) AND
 SAFETY CORRIDOR**



FENCE PROJECT

**MAINTENANCE /
 INSPECTION**

HOW TO PREDICT? RISK ASSESSMENT

WHO IS RESPONSIBLE? THE OWNER



COACH TRAINING

**OPERATIONAL
 PROCEDURES**

RESCUERS

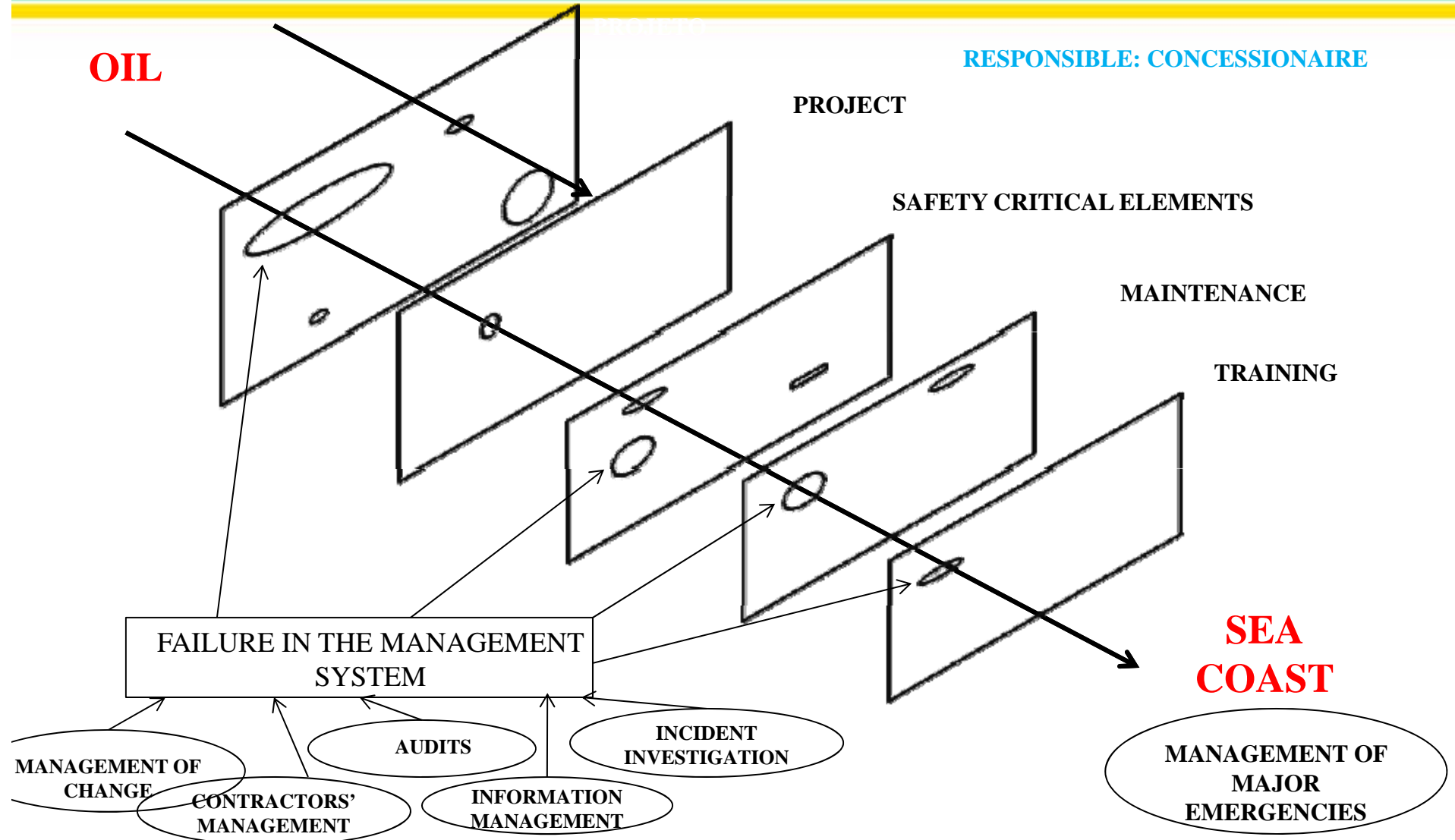


**AMBULANCE AND
 HEALTH
 PROFESSIONALS**



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MANAGEMENT PRACTICES AS BARRIERS



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Apparent reduction of efficiency and loss of income (costs of corrective maintenance, development of control tools, detection and protection equipment) – continuity of the business!

Low frequency of occurrence of catastrophic accidents may complicate decision making resource allocation in operational safety and sub evaluate the impacts of major accident.

The companies must include safety in their strategic objectives: policies and standards have to be aligned with the safe practices (operational safety management systems).

Recent Accident: Frade Field (Brazil, 2011).

Maritime Authority

- SOLAS
- MODU Code
- Further rules focused on marine systems (Communication, hull, ballast, navigation, general condition, evacuation etc)

Labour Ministry

- Rules focused on the occupational safety and health risks



Brazilian Institute of Environment (IBAMA)

- Environmental Licensing
- Spill response plans
- Rules focused on the interaction of facilities with the environment

Petroleum Agency (ANP)

- Rules focused on the process plant safety
- Subsea / Well Control

1) Very strict onboard auditing process

- 150 audits on the last (2010-2012);
- 1076 *non-conformity reports*;
- *US\$ 122 million in fines*
- *14 cautionary measures (operation halt)*

2) Regulator qualification improvement

- Use audits to identify gaps & needs;
- Trainings: drilling, workover, well control (IWCF and IADC), Well Design, offshore, inspection, lead auditor, corrosion, HAZID/HAZOP, etc.
- *Direct application knowledge; and*
- *Benchmarking.*

3) Regulatory framework revision

- Safety barriers, well control, cementing;
- *Improve performance indicators;*
- *Operators competency;*
- *Enhanced operations monitoring; and*
- *Encourage research and development.*

4) Enhanced communication

- With environmental and health regulator;
- With industry (workshops);
- With society (website, workers unions);
- Among regulators (IRF).

- **Focus on Process Safety** (major hazards) – *other regulators are responsible for occupational safety, health risks and environmental issues (including oil spill response and containment);*
- **Non-conformity reports** system (obligation to do) is a powerful tool to enforce continuous improvement;
- **Onboard presence** is necessary to “feel” safety climate and culture; and
- **Precautionary measures (operation halt) when risks are high...**

Perform the audits to guarantee the proper functioning of the plant process operating systems reducing the risks of harm to humans and the environment.

Industry development and lessons learned guided the regulation to the operational management systems (Brazilian model).

The Superintendence of Operational Safety and Environment, in behalf of ANP, plays a key role in raising, research, orientation and communication of lessons learned in the case of incidents that occur in the oil and gas industry.

Incessant search for the best performance of operational safety indicators and challenge for the industry.



Regulatory Framework for Operational Safety (SGSO)

Concessionaire is responsible for **continuously assessing their activities** and make decisions to keep the level of risk in its operations as low as possible.

Increasing the decision-making freedom of the operator does not mean letting it act without any control.

Regulators qualification and career (resources);

Improve **risk acceptance criteria** (more engineering tools opposed to assumptions and “experience”).

The oil project is allowed as long as ANP considers its risks acceptable!



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National Petroleum Agency

Gracias!

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