

# 4th INTERNATIONAL EARTH SCIENCE, GEOLOGY, OIL AND GAS CONFERENCE

December 02-03, 2019 | Kuala Lumpur, Malaysia

## Safeguarding Philosophy and Understanding What is Meant in Practice by Function, Performance, Risk and Integrity Level

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A barrier system is designed, operated and maintained to perform one or more safety functions throughout the facility life cycle. Parameters such as the mean time between failures, the mean time to repair and the test intervals are dynamic, kept within confidence intervals and must be constantly managed by teams showing a base line from the so-called burn-in, useful life up to the wear-out phase. This paper works out how the assumption that a safety critical and maintainable items are considered to be as good as new as long as it is functioning, which implies that there is an management framework in place to identify and correct deficiencies of barriers that are in steady state behavior of a cold standby. However such framework must follow continuous improvement to ensure management avoids creating further problems while solving others. Example: Gas detectors, installed near to the above ground segment of flowlines or the wellheads inside well pads for early detection of hydrocarbon release. Unfortunately, the system may dramatically escalate maintenance costs, reduce revenue and increase actions relative to the contribution to risk and safety integrity level achieved. As opposed to the well isolation barriers which also require high number of action teams formed and completed but proportionally high contribution to the risk and safety integrity level in a well pad. A particular case study is presented.

### Biography

João has completed 20 years experience in Risk consulting projects in the oil and gas, petrochemical and mining industries since 1999. His experience has largely been centered on the risk assessment of refineries, onshore process plants and offshore facilities in South America, Middle East and North Sea.