



Tobago Pipeline Project: QRAs and Supporting HAZIDs

Services Performed

IRC performed the quantitative risk assessments (QRAs) and supporting hazard identification studies (HAZIDs) for gas pipelines, tie-ins to existing regulator–accumulator stations, and the gas receiving and metering plant in Tobago. The studies allowed Environmental Sciences Limited (ESL) to assess and demonstrate the proposed development risks to be as low as reasonably practicable (ALARP) level.

Objectives

- Identify major hazards
- Determine risks from proposed pipelines and gas receiving plant to site workers and to the general public
- Assess whether the risks are tolerable

Project Description

The Trinidad and Tobago National Gas Company was developing new gas transportation and receiving facilities. The primary gas source, the BHP Billiton (BHPB) Angostura development, is located about 38.5 km off the northeast coast of Trinidad. The new gas transportation and receiving facilities comprise:

- 36-inch pipeline to Trinidad
- 12¾-inch pipeline to Tobago terminating at a gas receiving and metering plant at Cove Estate

IRC conducted a series of multidisciplinary team HAZID studies to identify the major hazards associated with the pipeline and facilities and to provide a solid foundation for the QRA. The scope of the QRA comprised potentially acute fatal risk from processing equipment, flammable storage, and pipeline releases. IRC also calculated event frequencies and simulated consequences to determine individual risk per annum (IRPA), potential loss of life (PLL), and assessed whether risks are within the project's tolerability criteria.



Key Benefits to Client

- The studies allowed ESL to conclude that risks are tolerable with no further risk reduction efforts required other than maintaining a comprehensive safety management system
- The studies completed the Environmental Impact Assessment requirements of the Trinidad and Tobago Environmental Management Authority to approve implementation



Protecting life and improving production by shaping the design and operation of hazardous facilities

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