



Elon: Explosion Assessment

Services Performed

IRC performed an assessment to determine potential explosion overpressures for Hess Corporation's Elon Project. Topsides potential explosion events were modeled using in-house tools and industry accepted software packages.

Objectives

- Identify explosion scenarios
- Conduct CFD modeling of credible scenarios to determine explosion overpressures at key locations
- Provide practical information to project team to determine explosion design requirements of occupied buildings

Project Description

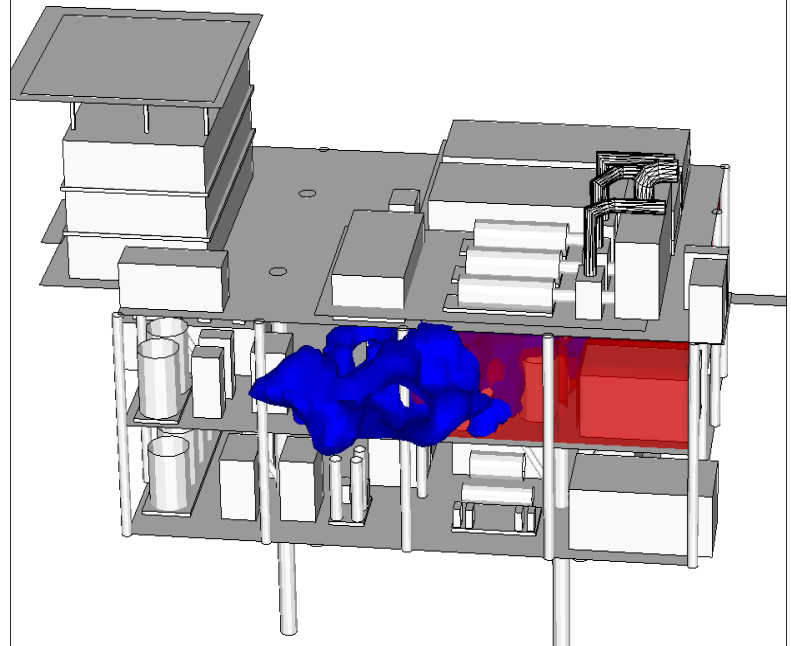
Hess Corporation's Elon Project offshore Equatorial Guinea was developed to recover crude oil from the Elon, Oveng, Okume and Ebano reservoirs.

Explosion modeling was performed to evaluate design criteria for key manned areas, in particular the facility's accommodation and office / workshop space. Using the CFD simulator *CEBAM*, the following hazardous release scenarios were modeled, addressing credible scenarios on all three decks:

- Release from the HP compression skid on the sub-cellar deck
- Release from the glycol skid on the cellar deck
- Release from the LP compression skid on the main deck

The analysis determined that explosion overpressures were generally low due to the well-ventilated open layout of the facility. Deck plating on the main deck provided specific protection for the accommodation from explosions on the lower decks.

Scenario 3 Cloud (Red) vs. Glycol Contactor Skid Dispersion Scenario (Blue)



Key Benefits to Client

- The analysis provided the client with detailed overpressure characteristics for a range of potential blast scenarios, allowing timely input into facility design
- Determination of conservative design blast criteria provided significant level of protection for personnel within the facility's occupied buildings



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