



ROZ Development Project: CO₂ & H₂S Gas Dispersion Analysis

Services Performed

IRC completed a CO₂ and H₂S gas dispersion analysis for the residual oil zone (ROZ) development project at the HESS Seminole (Texas) gas processing plant (SGPP). The work included establishing the tolerability criteria for CO₂ and H₂S gas releases, performing batch dispersion runs, and developing detailed outputs using leading industry consequence modeling computer software.

Objectives

- Determine the dispersion characteristics for venting CO₂ and H₂S gas from the flare tower of the SGPP expansion plan
- Determine tolerability criteria for CO₂ and H₂S releases based on exposure limits set by OSHA, ACGIH, NIOSH, and UK HSE
- Analyze the dispersion results based on the determined tolerability criteria for the two gases

Project Description

The Hess Corporation SGPP processes gas from the Seminole San Andres Unit (SSAU). To develop the SSAU residual oil zone (ROZ), Hess planned a \$300-million expansion of SGPP from 210 mmscfd to 280 mmscfd.

IRC conducted a dispersion analysis for the stack gas (containing CO₂ and H₂S) that might be released to atmosphere through the flare tower of the plant. Tolerability criteria were established for CO₂ and H₂S releases based upon exposure limits enforced by OSHA and recommended by ACGIH, NIOSH and UK HSE. The analysis approach included:

- Gathering the required input data for dispersion modeling
- Establishing the tolerability criteria for CO₂ and H₂S based upon regulated exposure limits
- Performing batch dispersion runs for the chosen conditions
- Developing detailed graphical outputs from Phast modeling software



Key Benefits to Client

- A clear understanding of the dispersion characteristics of released gas and the associated potential impact
- Detailed graphical outputs of gas concentration illustrating worst-case dispersion results
- A tool that can be used to justify that exposure limits are within industry regulated standards
- Ability to make informed design decisions for the planned expansion



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IRC Risk and Safety, LLC, 10497 Town & Country Way, Suite 800, Houston, Texas, 77024, USA
Telephone: 713 647 7929, Facsimile: 713 467 9757, Email: irc@ircrisk.com, Web: www.ircrisk.com