



**DARREN R. MALIK, P.E., CFEI**  
**Senior II Engineer**  
**Supervisor, Blast Effects Testing Facility Manager**  
**BAKER ENGINEERING AND RISK CONSULTANTS, INC.**

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**Education:**

**B.S., Nuclear Engineering, Texas A&M University**  
**M.S., Mechanical Engineering, Texas A&M University**

**Areas of Practice:**

Mr. Malik works in the BakerRisk San Antonio office as part of the Blast Effects Section. His primary responsibility is management of the BakerRisk Box Canyon Test Facility. This 2300 acre facility is used to perform vapor cloud explosion (VCE) testing, full scale structural response tests, and other high hazard tests that require large stand-off distances. Testing at Box Canyon is primarily focused on the development and validation of blast load or blast response prediction methodologies. Mr. Malik also has extensive experience in performing facility siting studies and incident investigations.

**Experience:**

- Over 10 years of experience in experimental research:
  - Designed, executed, and managed a number of test programs at BakerRisk. These test programs include large-scale vapor cloud explosions (VCE), detonation propagation, flammability, and other one-off explosion tests. He has executed many vapor cloud explosion test programs that have focused on the development and validation of blast loads using the Baker-Strehlow-Tang (BST) methodology.
  - Experienced in dynamic response instrumentation (i.e., pressure time history, flame arrival time, etc.), high-speed data collection, and high speed video acquisition.
  - Modified, designed, and/or implemented many of the systems (fuel delivery, data acquisition, supporting calculations, etc.) for test programs.
  - Developed LabVIEW code to gather high speed data for pressure time histories and flame speed arrival time in addition to long duration data logging to monitor gas concentration, temperature, pressure, etc.
  - Analyzed and interpreted the data based on the experimental results and reported the findings.
- Worked on numerous facility siting studies, consequence analyses, and explosion hazard analysis projects in which he predicted internal and external blast loads from explosion scenarios. The blast sources have included high explosives, runaway chemical reactions, dust explosions, vapor cloud explosions, and bursting pressure vessels.
- Analytical and testing experience has led to active involvement in, and supervision of, explosion and/or loss of containment-accident investigation teams. This work includes the following activities:
  - Scene documentation and collection/preservation of evidence.
  - Development and execution of evidence collection or analysis protocols.
  - Performance of engineering calculations in support of incident investigations.
  - Development and execution of experimental tests in support of incident investigations.
  - Determination of origin and cause.

**Professional Chronology:**

Undergraduate Research Assistant ITP Laboratory (2006-2008), Graduate Research Assistant TAMU (2008-2010) Baker Engineering and Risk Consultants, Inc. (Intern, 2008; Consultant, 2010; Project Consultant 2011 to 2013; Project Consultant II 2013 to 2015; Senior Engineer I 2016-2017, Senior II Engineer, 2017-present)