



JOHN N. DYER, P.E.
Senior Principal Engineer
BAKER ENGINEERING AND RISK CONSULTANTS, INC.

Education:

B.S., Civil Engineering, University of Texas at San Antonio

M.S., Civil Engineering, University of Texas at San Antonio

Areas of Practice:

Mr. Dyer works at BakerRisk's Houston office in the Structures Group. He is a Registered Professional Engineer with over 20 years of experience in blast-resistant structural design, explosives effects, dynamic structural analysis, and risk-based design. At BakerRisk, his activities have focused on mitigating risk and hazards to occupants of blast-loaded structures. Mr. Dyer has extensive experience in the design of blast-resistant buildings and building upgrades to mitigate explosion risk, blast damage, and occupant vulnerability in petrochemical facilities. He has participated in numerous projects as the lead structural engineer for major international petrochemical companies, including numerous facility siting studies of petrochemical plants and refineries around the world. Mr. Dyer has authored various papers on structural risk assessment and design of blast-loaded structures.

Experience:

- Managed multiple building upgrade design projects for numerous buildings at major refineries and petrochemical plants around the world. Such upgrades include hardening in-place of structural components, upgrades to windows, doors, and other miscellaneous non-structural components.
- Managed multiple design projects for many new buildings using risk-based proprietary methodology and software.
- Performed dynamic analysis and developed upgrades for multistory office buildings, industrial buildings, latticed communication towers, test cells, and other non-conventional structures.
- Provided guidance in the design of blast-resistant control rooms and other structures in multiple locations in the United States, Europe, and Asia. He has substantial experience in blast-resistant design using reinforced-concrete, steel, masonry, wood, and other materials, and has ample experience with government and industrial design methods and publications.
- Participated in Blast Effects Analyses (BEF) of numerous airports including airport terminals, control towers, FAA facilities, and parking garages. Some of these projects include the blast design of the Boise International Airport Terminal, the new Dallas-Ft. Worth Terminal and Tram structure, the Los Angeles International Airport control tower, the Atlanta Air Traffic Control Center, the New Orleans International Airport, and over a dozen of other major airports in the United States. He also performed conceptual blast designs of various baggage reconciliation rooms at the Miami International Airport. These blast-resistant structures were designed to withstand repeated blasts from bombs concealed in luggage, taking into consideration numerous space constraints and loading of the terminal building. Other government projects in which he has participated include the structural analysis of several facilities at the Pantex Plant.
- Experience using advanced structural software programs including dynamic finite element codes such as LS-DYNA, ADINA, and other programs. He has experience using programs from the PSADs suite, as well as other programs by the PDC such as BlastX, ConWep, BICADS, SBEDS, and others.
- Participated in many major accident investigations at industrial facilities in the United States and abroad.
- As a Research Assistant at the University of Texas at San Antonio, Mr. Dyer supported a research project that analyzed the response of buried structures to dynamic loading. His thesis, "Finite Element Analysis of Asphalt Pavements," examined the deceptively complex structure of pavement design. He performed finite element modeling of pavement systems subjected to varying types of loading, and validated the analytical model by comparing calculated primary response parameters with measured response parameters obtained in field tests.

Professional Chronology:

The University of Texas at San Antonio, Department of Civil Engineering (Research Assistant, 1996 to 1998); Baker Engineering and Risk Consultants, Inc. (Consultant, 1998 to 2001; Project Consultant, 2001-2006; Senior Consultant, 2006-2012; Principal Engineer, 2012- 2017, Senior Principal Engineer, 2018-present).

Professional Registrations/Certifications:

Registered Professional Engineer in the State of Texas and Iowa

Professional Memberships:

American Society of Civil Engineers (ASCE), National Society of Professional Engineers (NSPE)