

Resume

Richard M. Galli, PE

Safety and Security Engineer

Stone Security Engineering, PC

Background

Mr. Galli has participated in more than 100 successfully completed projects related to blast and fragment evaluation and mitigation for government and industrial sector clients. He has performed dynamic evaluation and design of steel, reinforced concrete, masonry, wood, and pre-engineered buildings for blast loading in accordance with analysis guidelines and level of protection requirements provided by UFC, ISC/GSA, VA, ASCE Petrochemical, PIP, ERC, or CSA standards. He has developed retrofit designs to mitigate structural deficiencies to applied blast loads and meet the aforementioned standards. The scope of these projects has ranged from facility siting and screening studies to retrofit feasibility evaluations and conceptual designs to detailed design and construction administration support. He has assisted with Quantitative Risk Analysis (QRA) for industrial facilities relating structural response to risk and occupant vulnerability. Mr. Galli has provided accident investigation support for several incidents at petrochemical facilities. He has provided analytical support and test plan development for retrofit and architectural component shock tube testing programs. Mr. Galli has also provided analysis for protection from fragment projectiles at firing bay enclosures of weapons testing facilities and at testing bays for oilfield equipment companies.

Representative Work Experience

The following projects are representative of the range of work performed by Mr. Galli.

- **United Nations Conference Building Glazed Door Design:** Lead blast engineer for door vendor. Performed blast analysis and developed calculation set for glazed door elevations. Evaluated door glazing, frames, fastening within the frames, and connections to the building curtain walls to meet specified GSA glazing response and project specified flexural responses with upper bounds for allowable reaction forces. Recommended changes in vendor design to meet these criteria and reviewed updated project document to confirm recommendations were correctly incorporated.
- **Intelligence Community Campus Curtain Wall Design:** Lead blast engineer for door vendor. Performed blast analysis and developed calculation set for curtain wall elevations. Evaluated door and window glazing, the curtain wall mullions, the perimeter window framing and associated anchorage, the door frame (including the glazing stop and horizontal rails of the door), and the door jamb and associated anchorage for threats based on UFC 4-10-02 to meet the appropriate level of protection per UFC 4-10-01 standards (ASTM F 1642 for glazing response and PDC TR 10-02 for component flexural responses). Recommended changes in vendor design to meet these criteria and reviewed updated project document to confirm recommendations were correctly incorporated.

- **Royal Canadian Mounted Police Basic Guideline for Applied Fragment Retention Film on Window:** Authored Guideline basic design guidelines for the mitigation of blast generated glazing debris from existing windows using various window film application techniques. Film applications include both daylight applications of window film as well as anchored film applications. The guideline provides the threshold regimes of blast loads and the limitations of each system are identified, allowing the Royal Canadian Mounted Police to make decisions regarding the use of the various window film mitigation techniques for specific installations.
- **Concequence, Risk-Based-Blast Assessment and Mitigation of Multiple Buildings for Petrochemical/Chemical Plants in USA and Canada:** Performed consequence based analysis or QRAs at multiple plants to identify and upgrade occupied buildings that did not meet the owner's risk criterion to the possible explosion scenarios. Completed conceptual and detailed risk-based blast upgrade designs for multiple control and admin buildings determined to be at high risk to blast threats. Provided calculations and drawings for blast upgrade retrofits prior to construction, and reviewed blast door vendor submittals and contractor field modifications as part of construction administration services. Representative facility owners include Valero, Sunoco, NuStar, Marathon, Suncor, Syncrude, Exxon Mobile, Conoco Phillips, Dow, and CNRL.
- **Seven Natural Gas Power Generation Centers, Delhi India:** Supported a risk assessment of interior accidental blast and fire hazards within seven power generation centers. Developed conceptual and detailed upgrade designs for operations, infrastructure, and occupied buildings.
- **New York Police Academy Glazed Door and Window Design:** Lead blast engineer for door vendor. Performed blast analysis and developed calculation set for glazed door and operable window elevations. Evaluated door and window glazing, frames, fastening within the frames, and connections to the building curtain walls to meet the project specified glazing response and component flexural responses. Recommended changes in vendor design to meet these criteria and reviewed updated project document to confirm recommendations were correctly incorporated.

Representative Clients

- US General Services Administration
- US Department of Defense
- US Veterans Administration
- Petrochemical Facilities
- Royal Canadian Mounted Police
- Department of Foreign Affairs, Trade and Development Canada
- Defense Research and Development Canada
- Vendors for Blast Resistant Resistant Products, Modules, Doors, and Windows
- Legal Firms
- Non-government Property Owners

Education

George Washington University, School of Engineering, Washington, DC
Master of Science, Transportation Safety Engineering (2011)
Bachelor of Science, Civil Engineering (2006)

Brief Employment History

Safety and Security Engineer, Stone Security Engineering, PC (2014- present)
Project II Engineer/Consultant, Baker Engineering and Risk Consultants, Washington, DC (2013 - 2014)
Project I Engineer/Consultant, Baker Engineering and Risk Consultants, Washington, DC (2010 - 2013)
Engineer/Consultant, Baker Engineering and Risk Consultants, Washington, DC (2008 - 2010)

Publications

Galli, R., El-Domiaty, K., and Wolff, E. (2012) **“Applicability of FRP Systems for Retrofitting Existing Buildings to Prevent Progressive Collapse”** ASCE Structures Congress 2012.

Galli, R., (2011) **“Development and Validation of Finite Element Models and Analysis of Critical Parameters of High-Tension Cable Barrier Systems.”** MS Dissertation, George Washington University.

Digges, K., Galli, R. (2008) **“Severe Head and Neck Injuries in NASS Rear Impacts.”** SAE Technical Paper 008-01-0190. 2008 SAE World Congress.

Teaching

Protective Knowledge - Blast Resistance By Design, 5-day course covering blast resistant design and other physical security concepts, October 2015.

Protective Knowledge - Blast Resistance By Design, 5-day course covering blast resistant design and other physical security concepts, May 2015.

Blast Resistant Structural Design Short Course - 5 Day Course Introducing Blast Resistant Structural Design, Instructor for Architectural Components and Progressive Collapse Portions of Course, February 2010, Loudoun, Virginia.

Blast Resistant Structural Design Short Course - 5 Day Course Introducing Blast Resistant Structural Design, Instructor for Architectural Components and Progressive Collapse Portions of Course, February 2011, Loudoun, Virginia.

Blast Resistant Structural Design Short Course - 5 Day Course Introducing Blast Resistant Structural Design, Instructor for Architectural Components and Progressive Collapse Portions of Course, February 2012, Loudoun, Virginia.

Royal Canadian Mounted Police Glazing Retrofit Course - 3 Day Course on Applicability and Evaluation of Fragment Retention Films, Developed Course Curriculum and Material, March 2012, Loudoun, Virginia.

Blast Resistant Structural Design Short Course - 5 Day Course Introducing Blast Resistant Structural Design, Instructor for Architectural Components and Progressive Collapse Portions of Course, February 2013, Arlington, Virginia.

France Metal Blast Resistant Door Short Course - 3 Day Course on Applicability and Blast Resistant Door Design, Developed Course Curriculum and Material, April 2013, Loudoun, Virginia.