KADIR CAN SENER, Ph.D., P.E.

CONTACT INFORMATION

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EMPLOYMENT HISTORY

AUBURN UNIVERSITY, Auburn, AL — Aug. 2019 – Present
Samuel Ginn College of Engineering, Department of Civil Engineering
Assistant Professor

PURDUE UNIVERSITY, West Lafayette, IN — June 2014 – July 2019
Lyles School of Civil Engineering, Robert L. and Terry L. Bowen Laboratory
Post-Doctoral Research Associate

EDUCATION

PURDUE UNIVERSITY, West Lafayette, IN — Aug. 2008 – May 2014
Ph.D. in Structural Engineering
Dissertation: Out of Plane Behavior and Design of Steel-Plate Composite (SC) Walls for Safety-Related Nuclear Facilities
Advisor: Prof. Amit H. Varma

UNIVERSITY OF ILLINOIS AT CHICAGO, Chicago, IL — Aug. 2007 – July 2008
Graduate Student
Graduate Assistantship Sponsored by Sargent & Lundy LLC

ISTANBUL TECHNICAL UNIVERSITY, Istanbul, Turkey — Sept. 2003 – June 2007
Bachelor of Science in Civil Engineering

RESEARCH INTERESTS

Testing and Design of Large Concrete and Steel Structures Subjected to Extreme Loads and Fire
Numerical Analysis of Structural Components, Members, and Systems
Missile and Impact Resistant Structures
Assessment of Conventional and New Structural Systems
Sustainable and Resilient Solutions for Infrastructure
Structures or Structural Members Constructed using Additive Manufacturing

RESEARCH EXPERIENCE

PURDUE UNIVERSITY, Post-Doctoral Research Associate — May 2014 – July 2019

- Lead Research Engineer for various projects related to bridge, building and industrial structures. Primary duties include:
  - Grant search, proposal writing and collaborating with research partners in academia and industry,
  - Conducting large-scale experimental and computational research on novel steel and concrete structures subjected to various load condition (a list of research projects involved given below),
  - Publishing research articles in peer-reviewed journals and conferences,

- Presenting research progress/outcomes in conferences around the world,
- Supervising graduate (MSc and PhDs) and undergraduate students on research projects,
- Delivering lectures for undergraduate courses as substitute teacher in the absence of advisors.

PURDUE UNIVERSITY, Graduate Research Assistant Aug. 2008 – May 2014

- Experimental and computational evaluation of steel-plate composite (SC) containment structures in AP1000® and US-APWR® Nuclear Power Plants. Research sponsored by the Department of Energy, Westinghouse Electric Company, URS Corporation / Mitsubishi Heavy Industries, Ltd. (Japan), and Bechtel Power Corporation.
  - Conducted full-scale structural testing to investigate the out-of-plane shear and flexure strength and behavior of steel-plate composite walls under various loading conditions including; monotonic shear, cyclic shear and concurrent tension and shear, both at ambient and elevated temperatures.
  - Compiled experimental databases of SC tests conducted in Japan, S. Korea, China and the U.S. to recommend design equations for out-of-plane shear and flexure strength with associated strength reduction factors.
  - Prepared finite element models for the containment internal structure (CIS) of the US-APWR® Standard Plant in the licensing stage. The models were used to evaluate the structural performance of the CIS subjected to the Fukushima accident scenario (concurrent thermal accident and seismic event).
  - Participated in preparing the structural design basis documents for the CIS presented to the US Nuclear Regulatory Commission (US NRC).
  - Performed 3D finite element analysis of an experimentally investigated 1/10th scale pressurized water reactor (PWR) containment internal structure (CIS). Performed comparisons of analytical results with experimental results and observations including the overall lateral load-deformation behavior of the structure and the formation of ductile energy dissipating mechanisms. The experimental and analytical results are also used to provide recommendations for modeling CIS structures for conducting seismic analysis.
  - Computational fiber model studies for comparing conventional reinforced concrete and steel-plate composite walls subjected to combined thermal and mechanical loading.

TEACHING EXPERIENCE

AUBURN UNIVERSITY, Instructor

- Advanced Steel Design, Spring 2020.

AISC N690 & Design Guide 32 Workshop, Instructor

- West Lafayette, Summer 2018.
  - Lecturer for a multi-day workshop developed to train engineers designing or reviewing SC structures.

PURDUE UNIVERSITY, Graduate Teaching Assistant

- Structural Engineering Courses, Spring 2009, Fall 2009.
  - Substituted lectures, led recitation hours, prepared solutions and graded assignments, held weekly office hours.

IMPACT OF RESEARCH ACTIVITIES

Dr. Sener has been actively involved in numerous research projects pertaining to various structural engineering topics. These projects have been funded by both public and private agencies. During his PhD, he devoted much of his time into the research, testing, analysis, and development of design specifications for steel-plate composite (SC) structures used in the Gen III+ nuclear power plants. As a graduate research assistant, he led research projects that performed fundamental research through large-scale experimental investigations and advanced computational studies. His responsibilities included evaluation and improvement of the structural behavior of steel-concrete composite members, connections and overall structural systems subjected to various extreme loading conditions including seismic and accident thermal loading. The outcomes of these research projects have been incorporated into AISC N690 specification, for the design of steel-concrete composite structures for safety-related nuclear facilities. This specification governs the design and construction of all steel building structures and safety-related nuclear facilities in the US, and used extensively around the world by engineers, consultants, and regulators.

Dr. Sener's PhD dissertation topic was on the experimental behavior and computational evaluation of out-of-plane shear behavior of steel-composite construction (SC). His PhD studies involved investigation of the shear behavior of SC structures at member level through conducting beam tests. His work at Bowen Laboratory was thoroughly reviewed and audited by the technical and quality engineers of the US Nuclear Regulatory Committee (NRC). The outcomes of his studies as a PhD research assistant were published in several articles in top journals in the field (J1, J2, J3, J5, J7, J9, J17, J18), and presented in numerous conferences. Additionally, he also devoted his time into system level studies by analyzing entire nuclear containment internal structure using finite element method. The system level finite element modeling approach was benchmarked against both member and system level experimental results. These models were reviewed by the NRC staff and were later published in peer-reviewed journals (J4, J6). Dr. Sener's work has directly impacted the design approval and licensing of the AP1000© and US-APWR© nuclear power plant designs in the US and abroad including the UK and China. The developed modeling approach were further used to evaluate the structural performance for additional load cases including accident thermal loading (J15).

During his Post-Doctoral studies, Dr. Sener became involved in more broader research areas within structural engineering. For example, he was involved with research on fracture-critical bridge structures having superstructures formed from retired railroad flatcars (RRFC). Multiple laboratory testing of a RRFC Bridge were used to propose load-rating guidelines for these constructed with composite concrete decks, which the results were further expanded using finite-element analysis based numerical parametric studies. The research results on load rating (J8) and the after-fracture load capacity of RRFC bridges were published as journal articles (J12, J13). Additionally, Dr. Sener took the lead research engineer role in the research project funded by the US Department of Energy (DOE) on investigating the in-plane and out-of-plane shear behavior of both steel-plate composite (SC) and reinforced concrete (RC) structures at ambient and elevated temperature conditions. The results of the experimental and numerical studies are published in journal papers (J10, J11, J16) and will be reflected in the upcoming code cycles of steel-plate composite and reinforced concrete structures.

Dr. Sener undertook the Co-Principal Investigator role for several research projects funded by both public and private agencies (a list given below). As a Co-PI, Dr. Sener successfully prepared proposal documents including technical calculations, drawings, budget, schedule and other necessary documents to initiate and execute these several projects. He has supervised graduate students (both MS and PhD level) during the course of these projects. As a Co-PI, he led the technical, budget and personnel management aspects of the research projects.

Dr. Sener was a Co-PI for the project on modular brick wall systems, which is a novel method for fabricating SC structures. He prepared the proposal documents for the execution of the project that included design of several full-scale SC specimens for validating the strength and stiffness requirements against applicable design codes (J14). Dr. Sener was a Co-PI for the project that investigated the non-conformance that occurred in the reinforced concrete shield building of the AP1000® power plant in Haiyang, China. These issues were also investigated and resolved by Dr. Sener's direct involvement in conducting experimental and numerical research for allowing the timely completion of the project in China and facilitated the commissioning of the plant in 2018.

Dr. Sener was responsible for conducting collapse investigations of a chemical processing structure on a project funded by Veolia Water Company. He has prepared proposal documents and involved in several pre-project meetings with the sponsor. He was supervising two graduate research assistants for each phase of the two-phase project, which consisted of experimental and numerical investigations to study, (i) steel web-compression buckling and (ii) concrete pier breakout.

Dr. Sener most recently participated in the research project funded by the US DOE through the ARPA-E program. He briefly assisted the project that focuses on investigating different concrete technologies for deployment in the Stable Salt Reactor (SSR) design for future generation nuclear power plants.

PROFESSIONAL/CONSULTING EXPERIENCE

STANEX LLC, West Lafayette, IN,
Principal Consulting Engineer — Aug. 2014 – Present

- Principal engineer specializing in finite element analysis of structures and members.
  - Involved in wide variety of projects that include analysis of nuclear power plant and bridge structures under unique loading conditions (a list of consulting projects involved given below).
  - Forensic investigations of collapsed or deteriorating structures.

SARGENT & LUNDY LLC, Chicago, IL,
Graduate Student Structural Eng. Associate — Sept. 2007 - Aug. 2008

- Assisted in providing structural modifications to existing nuclear power plants.
  - Evaluation of supporting structures in nuclear power plants including safety qualification of cable tray and conduit supports.
  - Involved in condenser removal/replacement project of a nuclear power plant.

ENKA Corporation, Istanbul, Turkey
Summer Intern — May 2006 – Aug. 2006

- Assisted to structural analysis of a low-rise apartment complex.

RESEARCH PROJECTS

Project Name	Funding Agency	Budget - Duration	Role	Project Details
Moltex Energy Limited – Rigid-Elastic Composite Civilworks	US DOE - ARPA-E	$100,000 – 01/01/2019 - 07/31/2019	Co-PI (50%)	The project was to investigate different concrete technologies for deploying in the Stable Salt Reactor (SSR) design.
Experimental and Numerical Evaluation of Reinforced Concrete Pier and Pass-Through Connection of KCL-3 Structures	Veolia Water Company	$130,000 – 07/15/2018 - 07/15/2019	Co-PI (50%)	Designing and performing full-scale (i) reinforced concrete pier breakout tests with shear lug anchors, (ii) web compression buckling tests of wide flange sections. The experimental results are used for additional parametric studies using benchmarked 3D finite element benchmark models of the tested specimens.
Experimental and Numerical Investigations on Shear Strength of Reinforced-	Westingho use	$234,000 – 09/15/2016 - 03/15/2017	Co-PI (50%)	Design and testing of full-scale reinforced concrete beam specimens with improperly placed shear ties. 3D finite element benchmark models of

Concrete (RC) Structures with Non-Conforming Shear Ties in Safety-Related Nuclear Facilities	Electric Company			specimens were developed. The benchmark models were used for evaluating the structure performance under different load conditions.
Experimental Studies on Modular Steel-Concrete Construction Assembled with a Novel Fabrication Technology	Modular Walling Systems Ltd (UK)	£20,000 – 03/15/2016 - 08/15/2016	Co-PI (50%)	Design and testing of full-scale steel-plate composite beam specimens with specific layout. Developing 3D finite element benchmark models of tested specimens.
Improvement of Design Codes to Account for Accident Thermal Effects on Seismic Performance	US DOE - NEUP	$800,000 - 06/01/2014 - 12/01/2017	Research Engineer	Preparing test setup design and pre-test calculations, analyses and conducting experimental testing of large-scale reinforced concrete (RC) and steel-plate composite (SC) specimens at ambient and elevated temperature conditions for nuclear facilities.
Development of Load Rating Procedures for Railroad Flatcars for use as Highway Bridges Based on Experimental and Numerical Studies	Indiana Local Technical Assistance Program (LTAP)	06/01/2014 - 12/01/2014	Research Engineer	Preparing finite-element benchmark models of the experimental testing of a RRFC bridge constructed with composite concrete decks, to be used in further parametric studies. Experimental and numerical evaluation of system level redundancy of RRFC bridge after failure of one or both main box girders.

CONSULTING PROJECTS

Project Name	**Funding Agency**	**Budget - Duration**	**Role**	**Responsibilities**
Collapse Investigation of Steel Frame Structure Supporting Crystallizer	Veolia – K+S Legacy Project	$152,500 – 10/15/2017 - 09/15/2018	Co-PI (50%)	Forensic investigation of a collapse incident by conducting site visits, reviewing plant drawings and calculations, performing multi-scale finite element analysis evaluations of collapsed steel joint and concrete pier.
Performance Evaluations of the Alford Street Bridge Grid Deck	Hardesty & Hanover LLC	$109,000 – 04/15/2017 - 09/15/2017	Co-PI (50%)	Performing finite element analysis evaluations to investigate the cause of cracking observed in the riveted open grid steel deck system installed on a bridge in Boston. The overall deck performance was analyzed using global

				models, and sub-modeling technique was utilized for critical regions.
Structural Evaluations of Rib-to-Web Connections of the Johnson Street Orthotropic Bridge	Hardesty & Hanover LLC	$16,500 – 02/15/2017 - 04/15/2017	Co-PI (50%)	Performing finite element analysis evaluations to quantify the stress amplification due to geometric nonconformities observed in the rib-to-web cut-out openings of an orthotropic bridge.
Finite Element Analysis of Steel-Plate Composite (SC) Walls using Layered Composite Shell (LCS) Elements at Operating and Accident-Thermal Conditions	Westinghouse Electric Company	$50,000 – 09/15/2016 - 12/15/2016	Co-PI (50%)	Performing analysis to; (i) develop benchmark models of in-plane and out-of-plane shear tests of SC walls using LCS elements. (ii) develop models using conventional shell elements with equivalent section properties, (iii) to provide correction factors to accurately capture the out-of-plane stiffness of SC walls at ambient and elevated temperature conditions.
Nonlinear Seismic-Accidental Thermal Analysis and Behavior of Large Steel-Concrete (SC) Modular Structures Under Initial Conditions	Shanghai Nuclear Engineering Research and Design (SNERDI-China)	$105,000 – 09/15/2015 - 11/15/2016	Co-PI (50%)	Computational analysis to estimate the lateral load performance of an idealized steel-plate concrete (SC) modular structure subjected to accident thermal loading and investigate the influence of faceplate initial imperfection using finite element analysis (FEA) method.
Evaluation of Used Nuclear Fuel Loading and Structural Performance Under Normal Transport Conditions	Idaho National Lab – US DOE	$40,000 – 08/15/2015 - 11/15/2015	Co-PI (50%)	Computational investigation of structural behavior of used nuclear fuel (UNF) during transportation using finite element models. Performing low cycle fatigue analysis resulting from dynamic behavior of the rail cars.

RESEARCH ACHIEVEMENTS

- Research results on steel-plate concrete composite structures are incorporated into design code ANSI/AISC N690-18, Specification for Safety-Related Steel Structures for Nuclear Facilities, Chicago, IL: AISC; 2018. https://www.aisc.org/globalassets/aisc/publications/standards/n690-18w.pdf

PUBLISHED REFEREED JOURNAL ARTICLES

J1 Varma, A.H., Malushte, S., Sener, K., and Lai, Z. Steel-Plate Composite (SC) Walls for Safety Related Nuclear Facilities: Design for In-Plane Force and Out-of-Plane Moments, Nuclear Engineering and Design, Elsevier Science, Vol. 269, Apr 2014. https://doi.org/10.1016/j.nucengdes.2013.09.019

J2 Sener, K.C., Varma, A.H. Steel-Plate Composite Walls: Experimental Database and Design for Out-of-Plane Shear, Journal of Constructional Steel Research, Elsevier Science, Vol. 100, Sept 2014. https://doi.org/10.1016/j.jcsr.2014.04.014

J3 Sener, K.C., Varma A.H., A. D. Steel-plate composite (SC) walls: Out-of-plane flexural behavior, database, and design. Journal of Constructional Steel Research, Elsevier Science, Vol 108, May 2015. https://doi.org/10.1016/j.jcsr.2015.02.002

J4 Booth, P.N., Varma, A.H., Sener, K.C., and Mori, K. Seismic behavior and design of a primary shield structure consisting of steel-plate composite (SC) walls, Nuclear Engineering and Design, Elsevier Science, Vol. 295, Dec 2015. https://doi.org/10.1016/j.nucengdes.2015.07.006

J5 Booth, P.N., Varma, A.H., Sener, K.C., and Malushte, S. Flexural behavior and design of steel-plate composite (SC) walls for accident thermal loading, Nuclear Engineering and Design, Elsevier Science, Vol. 295, Dec 2015. https://doi.org/10.1016/j.nucengdes.2015.07.036

J6 Sener, K.C., Varma, A.H., Booth, P.N., and Mori, K. Seismic behavior of a containment internal structure consisting of composite SC walls, Nuclear Engineering and Design Elsevier Science, Vol. 295, Dec 2015. https://doi.org/10.1016/j.nucengdes.2015.07.038

J7 Seo, J., Varma, A.H., Sener, K.C., A, D. Steel-Plate Composite SC Walls: In-Plane Shear Behavior, Database, and Design, Journal of Constructional Steel Research, Elsevier Science, Vol. 119, Mar 2016. https://doi.org/10.1016/j.jcsr.2015.12.013

J8 Washeleski, T.L., Sener, K.C., Connor, R.J., Varma, A.H. Load Rating Procedures for Railroad Flatcars Repurposed as Sustainable Highway Bridges, Journal of Bridge Engineering, ASCE. Vol. 21, Issue 11, Nov 2016. https://doi.org/10.1061/(ASCE)BE.1943-5592.0000945

J9 Sener, K.C., Varma, A.H., Seo, J., Experimental and Numerical Investigations of the Shear Behavior of Steel-Plate Composite (SC) Beams without Shear Reinforcement, Engineering Structures, Elsevier Science, Vol. 127, Nov 2016. https://doi.org/10.1016/j.engstruct.2016.08.053

J10 Sener, K.C., Varma, A.H., Bhardwaj, S.R. Effects of Accident Thermal Loading on Shear Behavior of Reinforced Concrete Members, ACI Structural Journal, American Concrete Institute, Vol. 116, No. 3, May 2019. https://doi.org/10.14359/51713305

J11 Bhardwaj, S.R., Sener, K.C., and Varma, A.H. Multi-Hazard Investigation and Testing of Composite (SC) Wall Piers: Seismic and Thermal Loads. Nuclear Engineering and Design, Elsevier Science, Vol. 348, July 2019. https://doi.org/10.1016/j.nucengdes.2019.03.026

J12 Sener, K.C., Washeleski, T.L., Connor, R.J., Varma, A.H. Experimental and Analytical Evaluation of the Redundancy of Repurposed Fracture-Critical Railroad-Flatcars, Journal of Constructional Steel Research, Elsevier Science, Vol. 159, Aug 2019. https://doi.org/10.1016/j.jcsr.2019.04.034

J13 Sener, K.C., Washeleski, T.L., Connor, R.J. Proposed Criteria to Assess the Redundancy of Repurposed Railroad-Flatcars Classified as FCMs, Journal of Constructional Steel Research, Elsevier Science, Vol. 159, Aug 2019. https://doi.org/10.1016/j.jcsr.2019.04.035

J14 Sener, K.C., Varma, A.H., Wang, S., Bhardwaj, S.R., Gallocher S. Modular Steel-Plate Composite (SC) Wall Steelbricks: Experimental and Numerical Evaluations. Nuclear Engineering and Design, Elsevier Science, Vol. 350, Aug 2019. https://doi.org/10.1016/j.nucengdes.2019.04.032

J15 Sener K.C., Varma, A.H., Chu M. Seismic Performance of an Idealized Steel-Plate Composite (SC) Modular Structure Subjected to Accident Thermal Loading, Nuclear Engineering and Design, Elsevier Science, Vol. 352, Oct 2019. https://doi.org/10.1016/j.nucengdes.2019.05.029

PUBLISHED CONFERENCE PAPERS WITH ACCOMPANYING PRESENTATIONS

C1 Varma, A.H., Malushte, S.R., Sener, K.C., and Booth, P.N., 2009. Analysis and Design of Modular Composite Walls for Combined Thermal and Mechanical Loading, Transactions of the 20th International Conference on Structural Mechanics in Reactor Technology (SMiRT 20), Paper #1820, Espoo, Finland, http://www.lib.ncsu.edu/resolver/1840.20/23788

C2 Varma, A.H., Malushte, S.R., Sener, K.C., and Lai, Z., 2011. Steel-Plate Composite Walls for Safety Related Nuclear Facilities: Design for Combined In-Plane and Out-of-Plane Demands, Transactions of the 21st International Conference on Structural Mechanics in Reactor Technology (SMiRT 21), New Delhi, India, Paper ID 760. https://engineering.purdue.edu/~ahvarma/Publications/p760.pdf

C3 Varma, A.H., Malushte, S.R., Sener, K.C., Booth, P.N., and Coogler, K., 2011. Steel-Plate Composite Walls: Analysis and Design Including Thermal Effects, Transactions of the 21st International Conference on Structural Mechanics in Reactor Technology (SMiRT 21), New Delhi, India, Paper ID 761. http://engineering.purdue.edu/~ahvarma/Publications/p761.pdf

C4 Varma, A.H., Sener, K.C., Zhang, K.C., Coogler, K. and Malushte, S.R., 2011. Out-of-Plane Shear Behavior of SC Composite Structures, Transactions of the 21st International Conference on Structural Mechanics in Reactor Technology (SMiRT 21), New Delhi, India, Paper ID 763. http://engineering.purdue.edu/~ahvarma/Publications/p763.pdf

C5 Varma, A.H., Malushte, S.R., Sener, K.C., Booth, P.N., 2012. Analysis Recommendations for Steel-Composite Walls for Safety-Related Nuclear Facilities, Structures Congress 2012, Chicago, IL: pp. 1871-1880. https://doi.org/10.1061/9780784412367.164

C6 Varma, A.H., Sener, K.C., Winkler, D., 2013. Behavior and Design of SC Composite Walls for Accident Thermal Loading, Transactions of the 22nd International Conference on Structural Mechanics in Reactor Technology (SMiRT 22), Paper ID 881, San Francisco, USA. http://www.lib.ncsu.edu/resolver/1840.20/33180

C7 Varma, A.H., Sener, K.C., Mitsubishi Heavy Industries Ltd. 2013. Lateral Load Behavior of a Pressurized Water Reactor Containment Internal Structure. Transactions of the 22nd International Conference on Structural Mechanics in Reactor Technology (SMiRT 22), Paper ID 862, San Francisco, USA. http://www.lib.ncsu.edu/resolver/1840.20/33174

C8 Sener, K.C.*, Varma, A.H., Malushte, S., and Coogler, K. 2013. Experimental Database of SC Composite Specimens Tested Under Out-of-Plane Shear Loading. Transactions of the 22nd International Conference on Structural Mechanics in Reactor Technology (SMiRT 22), Paper ID 878, San Francisco, USA. http://www.lib.ncsu.edu/resolver/1840.20/33177

C9 Bhardwaj, S.R., Varma, A.H., and Sener, K.C. 2015. On the Calculation of Design Demands for Accident Thermal Loading Combination. Transactions of SMiRT 23 in Manchester, UK, Paper ID 850, IASMIRT, http://www.lib.ncsu.edu/resolver/1840.20/34279

C10 Sener, K.C.*, Varma, A.H., and Bhardwaj, S.R. 2015. Out-of-Plane Shear Strength of SC Walls: Effects of Additional Forces. Transactions of SMiRT 23 in Manchester, UK, Paper ID 697, IASMIRT. http://www.lib.ncsu.edu/resolver/1840.20/34153

C11 Sener, K.C.*, Varma, A.H., and Bhardwaj, S.R. 2015. Accident Thermal Loading Effects on Seismic Behaviour of Safety-Related Nuclear Structures. Transactions of SMiRT 23 in Manchester, UK, Paper ID 701, http://www.lib.ncsu.edu/resolver/1840.20/34286

C12 Sener, K.C.*, Varma, A.H., and Chu, M. 2017. On the Performance of Steel-Concrete Composite (SC) Modular Structures for Seismic and Accident Thermal Conditions. Transactions of SMiRT 24 in Busan, S. Korea, Paper ID 06-15-05. http://www.lib.ncsu.edu/resolver/1840.20/36106

C13 Varma, A.H., Sener, K.C.*, and Bhardwaj, S.R. 2017. Investigation of Accident Thermal Effects on Reinforced Concrete Beams. Transactions of SMiRT 24 in Busan, S. Korea, Paper ID 06-07-02. http://www.lib.ncsu.edu/resolver/1840.20/36131

C14 Bhardwaj, S.R.; Sener, K.C.; Varma, A.H. 2017. Investigation of accidental thermal effects on seismic performance of structural walls. Transactions of SMiRT 24 in Busan, S. Korea, Paper ID 06-14-05. http://www.lib.ncsu.edu/resolver/1840.20/36097

C15 Sener, K.C.*, Varma, A.H., and Bradt, T. 2017. Cyclic Out-of-Plane Behavior of SC Composite Structures. Transactions of SMiRT 24 in Busan, S. Korea, Paper ID 06-18-01. http://www.lib.ncsu.edu/resolver/1840.20/36114

C16 Sener, K.C.*, Varma, A.H., Wang, S., Bhardwaj, S.R., Gallocher S. 2017. Experimental Studies on Modular Steel-Concrete Construction Assembled with a Novel Fabrication Technology. Transactions of SMiRT 24 in Busan, S. Korea, Paper ID 06-18-03. http://www.lib.ncsu.edu/resolver/1840.20/36069

C17 Chakraborty A., Radha S.R., Sener, K.C., Varma, A.H. 2017. Reliability Based Design Optimization of Primary Shield Structure Consisting of Steel-Plate Composite (SC) Walls Under Seismic Load. Proceedings of the ASME 2017, PVP2017-66133. https://doi.org/10.1115/PVP2017-66133

C18 Bhardwaj, S.R., Sener K.C., Varma, A.H. 2018. Experimental evaluation of structural walls for seismic and thermal forces. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA. https://pdfs.semanticscholar.org/4a75/d5abfa782f4fe96259168f8d396346ceb123.pdf

C19 Sener K.C.*, Varma, A.H., Chu M. 2018. Investigation into the Seismic and Accident Thermal Performance of Safety- Related Nuclear Facilities. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA. https://pdfs.semanticscholar.org/f46a/7156900476d1eabea70b05deed953686a386.pdf

C20 Sener, K.C.*, Witte, J., Varma, A.H. 2019. On the Influence of Load Width on Web Compression Buckling Strength. Proceedings of the Annual Stability Conference, Structural Stability Research Council (SSRC), St. Louis, Missouri, April 2-5, 2019. https://www.aisc.org/globalassets/continuing-education/ssrc-proceedings/2019/sener_et_al_ssrc_2019.pdf

C21 Sener, K.C.*, Varma, A.H., Wang, S. 2019. Study on Modeling Out-of-Plane Behavior of SC Walls Using Shell Elements. Transactions of SMiRT 25 in Raleigh, North Carolina, USA, Paper ID 974.

C22 Sener, K.C.*, Varma, A.H. 2019. Numerical Analysis of Reinforced Concrete Beams Subjected to Accident Thermal Loading. Transactions of SMiRT 25 in Raleigh, North Carolina, USA, Paper ID 972.

C23 Connor, R.J., Sener, K.C., Rathburn, T.L. 2019. Proposed AASHTO-Ready Specifications for Load Rating and Redundancy Evaluation of Railroad Flatcars Used as Highway Bridges on Low-Volume Roads. 12th TRB International Conference on Low-Volume Roads.

JOURNAL PAPERS UNDER REVIEW

J16 Bhardwaj, S., Sener, K.C., and Varma, A.H. Effects of Accident Thermal Loading on In-Plane Behavior of Steel-Plate Composite (SC) Walls. Journal of Structural Engineering, ASCE, under review, October 2019.

J17 Sener, K.C., Varma, A.H., Effects of Ties on the Out-of-Plane Shear Behavior of Steel-Plate Composite Walls, ASCE Journal of Structural Engineering, under review, November 2019

JOURNAL PAPERS UNDER PREPARATION

J18 Sener, K.C., Varma, A.H., Experimental Behavior of Steel-Plate Composite Walls Subjected to Cyclic Shear & Combined Shear and Axial Loading, Journal of Structural Engineering, in progress

J19 Sener, K.C., Varma, A.H., Behavior of Shear Critical SC Beams Subjected to Accident Thermal Loading, Journal of Structural Engineering, in progress

TECHNICAL REPORTS

1) Chakraborty, P., Sabharwall, P., Spears, R.E., Coleman, J.L., Sener, K., Varma, A.H. Modeling and Simulation of Used Nuclear Fuel During Transportation with Consideration of Hydride Effects and Cyclic Fatigue (INL/EXT--15-36697). United States, Sep 2015. https://doi.org/10.2172/1238210

INVITED PRESENTATIONS

1) Sener, K.C., Behavior and Analysis of Concrete Nuclear Structures for Accident Thermal Loading, American Institute of Concrete (ACI) Convention, MINI SESSION: On the Use of Advanced Finite Element Methods for Design of Reinforced Concrete Nuclear Structures - Jointly Sponsored by ACI 349 and 447 Committees, Salt Lake City, UT, March, 2018

2) Sener, K.C., Behavior and Design of SC Walls Subjected to Mechanical and Thermal Loading, International Civil Engineering & Architecture Symposium for Academicians (ICESA) 2014, Antalya, Turkey, May, 2014

3) Sener, K.C., Out-of-Plane Shear Behavior of Composite SC Structures, American Institute of Concrete (ACI) Convention, Session on Composite and Modular Structure - Jointly Sponsored by ACI 335 and 349 Committees, Dallas, TX, April, 2012

PROFESSIONAL AFFILIATIONS

- American Institute of Steel Construction (AISC)
- American Society of Civil Engineers (ASCE) - Structural Engineering Institute (SEI)
- American Concrete Institute (ACI)
- Earthquake Engineering Research Institute (EERI)
- International Association for Structural Mechanics in Reactor Technology (IASMiRT)

CITIZENSHIP/PROFESSIONAL LICENSURE

- U.S. Citizen
- Turkish Citizen
- Licensed Professional Engineer in the State of California (C-90773)