

Yi-Lun Chu

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Well-established professional with over seventeen years of experience in structural engineering, particularly in seismic analysis and design, structural and non-structural components seismic fragility evaluation, and seismic screening and code compliance walkdown. A certified US SQUG walkdown engineer with extensive experience on seismic, structural, and mechanical inspection and evaluation for commercial and high value industrial facilities. In-depth knowledge of design codes and industry standards, such as OSHA, ACI codes, AISC codes, ASME, ASTM and ASCE standards. Great attention to details.

Professional Certification

- Registered SE (Structural Engineer) in Taiwan

Skills & Expertise

- Seismic Design and Analysis
- Structural Design and Analysis
- Piping Stress Analysis
- Seismic Vulnerability Walkdown
- Dynamic Structural Analysis
- Vibration Engineering
- ANSYS
- STAAD, GTSTRUDL
- MATLAB

Professional Experience

SELF-EMPLOYED | Andover, MA (2021 May – Present)

Providing technical oversight/guidance/review and developing plant modification strategies for Taiwan nuclear power plants and semiconductor manufacturing fabs to meet seismic requirements and assure operations after major earthquakes.

JENSEN HUGHES | Wakefield, MA

Senior Engineer and Project Manager (2016 May – 2021 April)

Hired as a new member of the technical advisor team. Led and coordinated multiple seismic evaluation projects. Served as peer reviewer for several US nuclear power plants **Seismic Probabilistic Risk Assessment** (PRA) projects. Assisting marketing and project management for Asian operations.

- Peer reviewer of seismic **fragility evaluation** for a nuclear power plant in China in support of its Seismic PRA project.
- Directed and led a Safety-Related Fuel Storage Building seismic re-evaluation. Project budget: **\$500K**.
- Performed modal analysis for an electrical control cabinet for a US nuclear power plant to establish in-cabinet seismic demand for device qualification. Project budget: **\$200K**.
- Provided seismic design review, professional consultation, and **onsite seismic walkdown** as well as **fragility evaluations** for a semiconductor fab in China. Project budget: **\$340K**.
- Assisted a Taiwan semiconductor fab to upgrade its MEP seismic design and **support insurance company audit**. Project budget: **\$320K**
- Performed technical review on building and component **fragility** calculation for a Korea nuclear power plant
- Authored seismic design guideline for semiconductor Fabs in Taiwan and Korea

Professional Experience (Continued)

STEVENSON & ASSOCIATES | Woburn, MA 2008 – 2016
Staff Engineer (2008 – 2010) Senior Engineer (2010 – 2016)

Hired as key member of technical team to support company's rapid growth. Managed and directed various mid- to large scale seismic evaluation projects.

- Led and directed the Seismic Margin Assessment and **fragility** analyses and developed **fragility curves** for new nuclear plants and seismic conductor fabs in US and Taiwan. Budgets ranged from **\$200K to \$1.5 million** each.
- Provided seismic design review, professional consulting, and **onsite seismic walkdown** as well as micro-vibration mitigation for several semiconductor fabs in Taiwan. Budgets ranged from **\$100K to \$400K**.
- Managed a Taiwan nuclear power plant seismic design basis upgrade project. Responsible for electrical and mechanical equipment design evaluation and modification. Budget: **\$1,200,000**.
- Provided support for the nuclear regulatory body/peer technical review and provides consultation for regulatory compliance.
- Performed detailed ANSYS finite element structural modeling of radioactive slab tanks for the metal oxide (MOX) facility project. Responsibilities include stress and deformation analysis of tank support structures to ensure that tight tolerance limits are maintained.
- Performed detailed ANSYS finite element Thermal Transient Analysis of Class 1 Piping Attachment and primary plus secondary and peak stress evaluation (Fatigue) per ASME BVPC Section III, Division 1 – NB and code cases.
- Performed buried fuel oil pipe stress analysis using ASCE 4 standard.
- Performed stress evaluation for various fire protection equipment, including tanks, pipes, valves, control panels etc.
- Peer reviewed **slope stability evaluation** for a 600kL diesel fuel storage tank foundation located near a creek.
- Performed concrete water tank stress evaluation under design seismic event using ACI 350.3.
- Authored fuel oil storage tank design example in compliance with ASME BVPC Code Division 1 Section III Subsection ND-3800.
- Prepared design modification package for cask crane girder seismic upgrade.
- Performed condition assessment for a RC water intake structure using ASCE 201.1R and ASCE 11.
- Served as **US Seismic Qualification Utility Group (SQUG) Seismic Walkdown Engineer** training course instructor.

Education

Ph.D., Earthquake and Structural Engineering; State University of New York at Buffalo | Buffalo, NY
Master of Science, Structural Engineering; National Taiwan University | Taipei, Taiwan
Bachelor of science, Civil Engineering; National Taiwan University | Taipei, Taiwan