

OUR PROFILES

Dr. Hong Ming Lee has 40 years of experience in Structural Analysis, Finite Element Methods, and Computer Software Development. He earned his Ph. D. degree in Civil Structural Engineering at UC Berkeley. He received his B.S. in Civil Engineering from the National Taiwan University, M.S. in Electrical Engineering & Computer Science from another UC campus (University of Cincinnati), and MBA from Golden Gate University. He is a registered Civil Engineer in the State of California. He has resolved numerous special stress analysis problems using advanced methodologies. His primary focus is on advanced piping dynamic and stress evaluation, and development of integrated computer software systems.

Milton Dong has 40+ years of expert knowledge in Plant Design, Software Engineering, and QA/QE. He received his BS and MS degrees in Mechanical Engineering at UC Berkeley. He is currently a registered Professional Engineer in the State of California and State of Kansas. His specialty areas are in piping stress analysis, Class 1 piping component analysis, finite element analysis, local stress analysis, pipe support design, structural dynamics, earthquake engineering, water hammer analysis, vibration analysis, equipment qualification, graphic interaction, quality engineering, and project automation.

Dr. Asif Arastu has 38 years expert knowledge in the area of thermal hydraulic analysis in support of the design, evaluation and investigation of water/ steam hammer in plant operation, system performance, and licensing for the nuclear, fossil power plants, and other facilities. His work on more than 60 plants worldwide includes steady state and transient fluid flow & heat transfer analyses, sub-compartment pressure/temperature analyses, diagnostic analysis for water/ steam hammer events, flow induced vibrations in piping systems and structures, and plant simulation analysis. He completed both his B.Sc. and Ph.D. degrees in Nuclear Engineering at University of London, UK. He has recently been elected as ASME Fellow and has been a registered professional engineer in the State of California.

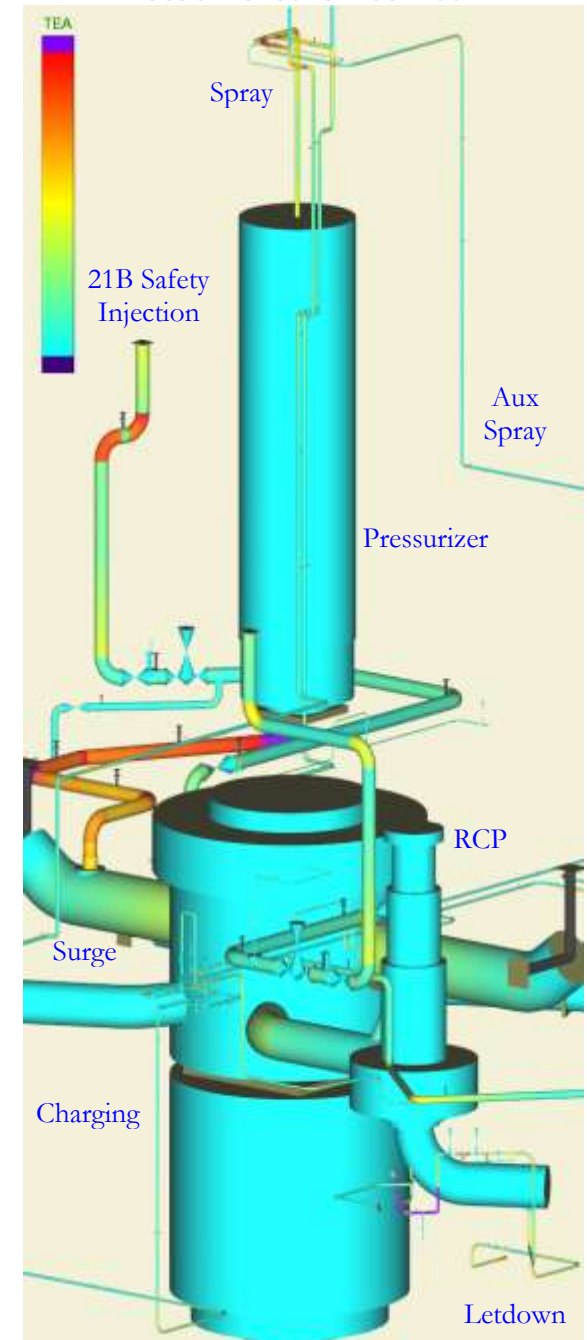
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A MBE Certified and 10CFR50 Appendix B
Company



WE PROVIDE THE FINEST ENGINEERING PROFESSIONAL SERVICE

Our firm has experience, industry knowledge, and, of course, innovative ideas to support our utility clients. This brochure will provide the in-depth information about our background and describe the different services we offer (partial list as shown below). We are also a MBE certified and company.

ENGINEERING SERVICE

- **Structural and component** (nozzle, pipe attachment, base plate, etc.) **finite element and design analysis.**
- **Severe dynamic loads** such as **water hammer and steam hammer** events, **seismic time history** simulation, and **steady state vibration.**
- **Piping stress analysis, pipe support** design, and **standard and non-standard base plate analysis.**
- **Piping vibration** monitoring, evaluation and reduction.
- **ASME III NB/Class 1 fatigue stress analyses,** including **environmental fatigue, 2-D or 3-D thermal transient calculations.**
- **Seismic design and stress analysis** using **response spectra and time history dynamic loading.**
- **Power spectra density, Fourier transformation,** and **dynamic load factor calculation.**
- **Non-linear system evaluation** as well as **inelastic pipe supports.**
- **Snubber** replacement and qualification
- **Operational and environmental erosion/corrosion** evaluations.
- **Fire safety and fire protection** systems.
- **Pipe rupture, pipe whip** and **jet impingement** design.

- **Heat Transfer, thermal hydraulics, Sub-compartment pressure/temperature, thermal stratification, and two-phase flow** analyses
- **Plant outage** and **field support.**

COMPUTER AIDED ENGINEERING AND APPLICATION SUPPORT

- **Provide technical support** for **stress analysis** and **pipe support** design programs.
- **Provide expert knowledge in user support, data translation/conversion, and user training** of computer programs, i.e., **ME101, USLAM, ANSYS, RELAP5, ASME Code Compliance, etc.**
- **Design and setup of report writer** or **template** for **signature-ready reports.**
- **Provide computer consulting service** in **database preparation and data management.**
- **Develop software** for **civil, mechanical, electrical, plant design related applications,** e.g., **system integration, finite element methods, jet load computation, or flow induced dynamic loads.**
- **Provide QA support** in **technical audit and program benchmarking.**

OUR PROJECTS

Our strength in this highly competitive business is our full understanding of the piping stress analysis, pipe support design, and technical capabilities in development of finite element programs, particularly in loading due to time history and steady state vibration. Here is some sample of engineering projects that we have encountered in the past (partial list):

- **PSE&G HC Torus piping** analyses
- **PSE&G HC Fire Protection System** hydraulic and structural analyses.
- **SSES Extended Power Uprate (EPU) complete ASME NB Class 1 systems** with updated stress reports and fatigue re-analyses.
- **SSES RWCU ASME-NB Class 1 stress** report.
- **SSES RCIC and MSC snubber** replacement stress analysis

- **SSES chill water system** support removal project.
- **WCNOC MSIV/MFIV** replacement and **jib crane** design analysis.
- **WCNOC, CCNPP & DCPD** re-fuel outage technical support.
- **WCNOC Engineering Data Management (EIS) Project**
- **CCNPP pressurizer nozzle ASME Class 1** fatigue analysis.
- **CCNPP surge, spray, safety injections, letdown and charging line Nuclear NB Class 1** fatigue and thermal stratification analyses.
- **PVNGS pulsation check-valve** vibration analysis.
- **PVNGS & DCPD SGR** stress re-analyses.
- **DCPD Energy Absorber Dome Crane** analyses.
- **DCPD RCL branch piping** stress re-analyses.
- **SONGS seismic spectrum** evaluation and data management.
- **SONGS Safety Injection piping system** stress analyses.
- **DOE WTP hydrogen** detonation analyses.

QUALITY ASSURANCE

Exelon Corp., WCNOC, and TalenEnergy have completed the extensive Quality Assurance Audits. Unisont Engineering, Inc. is on their approved vendor list (AVL) to supply engineering services for their fleet of nuclear power plants. The results of this audit are available to other Nuclear Procurement Issues Committee (NUPIC) utilities by contacting Mr. Stanley Mitchell of Exelon Corp at (630)657-3665 or Mr. Gerard Machalick of TalenEnergy at (570) 542-3861.

Call (510) 338-4208



RESUME (IN ALPHABETICAL ORDER)

- **Asif Arastu** is a principal engineering consultant at UEI. Dr. Arastu has the expert knowledge in the area of thermal hydraulic and radiation dose analysis in support of evaluation, investigation and resolution of water/steam hammer events in plant operation, system performance, and licensing for the nuclear and fossil power plants. His work includes steady state and transient fluid flow & heat transfer, sub-compartment pressure/temperature analysis, diagnostic and root cause analysis for water /steam hammer events, flow induced vibrations in piping systems and structures using computer codes such as RELAP5, HSTA, GAFT, PCFLUD, etc. He had completed both his B.Sc. and Ph.D. degree in Nuclear Engineering at University of London, UK. Dr. Arastu has been participating and organizing as chair for numerous ASME committees, conferences and recently has been elected as ASME Fellow. He is a registered professional engineer in the state of California.
- **Farzin Faili** is one of our advisory consultants. Farzin has over 35 years' experience in the areas of civil structural design and engineering analysis for various nuclear and fossil power plants. He provided his vast expert knowledge in dynamic and static modeling, time history and response spectrum structural analyses and together with elastic and non-linear approach to assist clients for resolving AISC code and nuclear regulatory requirements. He has successfully completed two special projects using the FINEL non-linear analysis to evaluate the Diablo Canyon's Turbine Building Operating Deck and the Spent Fuel Pool Thermal Cracking Project. He has assisted both unit of the Diablo Canyon Power Plant to support over 30 refuel outages. He had completed his M.S. degree in Civil Engineering at University of California, Davis, and B.S. degree in Civil Engineering at California State University, Sacramento. He currently is a registered civil engineer in the state of California.
- **Milton Dong** is a principal consultant at UEI. Mr. Dong has 40-year experience in the area of finite element stress analysis, piping component design, structural dynamics, earthquake engineering, vibration analysis, pipe support design, equipment qualification, graphic interaction, quality engineering, software development, and project automation. He is responsible for quality assurance program on various power and waste treatment projects. He has represented UEI on the projects and with the client to resolve technical questions and as required to coordinate work. He had completed his BS and MS degree in Mechanical Engineering at University of California, Berkeley. He currently is an ASME member and a registered mechanical engineer in the state of California and Kansas.
- **Hong-Ming Lee** is a principal consultant of UEI. Dr. Lee has over 35 years in information technology, pipe and system vibration, Class 1 fatigue phase jet impingement, design/support of integrated design engineering system, plant design engineering, nonlinear structural dynamics, computerized tomography, civil structural design and construction. Dr. Lee specializes in stress analysis with broad knowledge in the work processes and standard applications of most engineering disciplines of the power and P&C industries. He also has extensive experience in design methodologies and software development, as well as complete system setup. He has developed several nonlinear programs for use in stress analysis, including ME101 that has real time graphics and has integration with DBMS, CADD and other CAE programs. He had completed his Ph.D. in Civil Structural, University of California at Berkeley, MS degree in Electrical Engineering & Computer Science, University of Cincinnati, and BS in Civil Engineering, National Taiwan University. He currently is a registered civil engineer in the state of California.
- **Eugene Tom** is a senior engineering consultant at UEI. Mr. Tom has over 35 years of engineering experience in piping stress analysis, pipe support analysis, ASME Section III, Section VIII and ANSI B31.1, B31.3, B31.4 and B31.8 Code applications, seismic qualifications for equipment, and Nuclear Class 1 fatigue evaluations. His is also expertise in the area of fluid hydraulic analysis and thermal dynamic analyses to predict adverse environmental conditions inside closed environments. He is a experience user of such piping computer codes such as ME101, AUTOPIPE, Caesar-II, and fluid transient computer codes such as RELAP5, USLAM and GAFT. He held a BS degree of Mechanical Engineering, California State University at San Jose. He currently is a member of ASME and a registered mechanical engineer in the state of California.
- **Sabry Youssef** is one of our advisory consultants. Dr. Youssef has over 40 years' experience in the areas of civil structural design and analysis in plant operation, and licensing of the safety and non-safety related structural systems for both nuclear and fossil power facilities. He worked on various projects of designing various structural systems, such as HVAC ducts and duct supports, tornado generated missile barriers, spent fuel pool concrete structure, containment spray piping supports, intake concrete structure and tunnels, discharge concrete structure, turbine building roof structure. He also has vast expert knowledge in polar crane design, fuel handling building seismic design, steam generator's concrete anchors design, structural support design of reactor coolant pumps, pressurizers and reactor pressure vessel, and concrete shield wall design. He had completed his Ph.D. degree in Structural Engineering at Karlsruhe University, Germany, M.S. degree in Structural Engineering at Asyut University, Egypt, and B.S. degree in Structural Engineering at Ein Shams University, Egypt.
- **Walter W. Yuen** is one of our advisory consultants at UEI. Prof. Yuen is also served as a Professor of the Department of Mechanical and Environmental Engineering at the University of Santa Clara. His research interests are in two-phase flow, radiation heat transfer and numerical computation. He is active in ASME and AIAA. His projects have been funded by NSF, NRC, DOE and NASA. Professor Yuen's current study includes the fundamentals of metal combustion in fire research, radiation heat transfer in flame spread, flash over and other important fire safety issues. Since 1990, Professor Yuen expanded his scope of research to Reactor Safety and the fundamentals of multi-phase flow. He developed two computer codes, PM-ALPHA and ESPROSE.m having advanced state-of-the-art numerical tools for analysis of Steam Explosion. He is co-author on numerous technical journals and conference publications in these areas.