LONGENECKER & ASSOCIATES

GARY L. VINE

EXPERIENCE SUMMARY

Nuclear energy industry professional with extensive nuclear technology, energy policy and management experience, including 27 years in commercial nuclear energy with the Electric Power Research Institute (EPRI), ten years as an independent nuclear consultant, and ten years Navy experience on nuclear submarines.

DETAILED EXPERIENCE (RELEVANT TO DOE PROJECTS)

Independent Consulting Assignments

2008-2017

Consulted for DOE, EPRI, and other clients on a range of topics and initiatives. Highlights include:

- Conducted a critical review of the Global Nuclear Energy Partnership (GNEP) for DOE-NE. The resulting White Paper (2009) helped refine GNEP program content and rationale. The review involved extensive interviews with a dozen senior utility executives, and close coordination with NEI and EPRI.
- Prepared an extensive analysis of cooling water issues at U.S. nuclear plants for DOE-NE. Resulting report ("Cooling Water Issues and Opportunities at U.S. Nuclear Power Plants," INL-EXT-10-20208, Dec. 2010) addressed technology options, Clean Water Act §316(b) compliance issues, longer term water shortage and water conflict issues, and R&D needs. Co-authored follow-on EPRI report, "Tradeoffs between Once-Through Cooling and Closed-Cycle Cooling for NPPs." (2009-12)
- Conducted a number of reviews of technical and policy issues for DOE, including R&D strategic plan reviews, potential DOE actions to help revitalize nuclear energy, life extension of current nuclear fleet beyond 60 years, and level of industry cost-sharing support that could be anticipated (2008-2012).
- Served as the senior technical leader for 1-2 week long USTDA-sponsored Orientation Visits (OVs) to the U.S. by senior delegations of nuclear industry and government leaders for five developing countries: Vietnam (2008), Lithuania (2009), Thailand (2010), Romania (2010) and Egypt (2011, deferred). Organized and hosted delegation visits to State Dept., DOE, Commerce Dept., NRC, NEI, INPO, reactor vendors, Watts Bar, Vogtle.
- Independent review of design, operational, economic and deployment issues associated with SMRs. Co-authored "SMRs: A Call for Action," Hoover Institution Press, 2015. (2010-2015).
- Writing assignments for the President's Blue Ribbon Commission on America's Nuclear Future (2011).
- Prepared NP2010 COL/DC Lessons Learned Report (2012) and "NP2010 Final Closeout Report" '[for NE-72, with focus on Lessons Learned and recommendations for future cost-shared programs.
- Lead L&A investigator on IDIQ Task Order #5 team (Shaw, L&A and WEC) to investigate options for advanced LWR fuels. Prepared "Strategy for Deployment of Advanced LWR Fuels," a business case for implementation in both current and future LWRs, under an industry-DOE partnership (2011).
- Co-authored "Advanced Manufacturing Technology Roadmap for Nuclear Energy" (Sept. 2012).

- Led a ten-person L&A team (working with CBI) under IDIQ Task Order #11 to develop design concepts and alternatives for a Consolidated Storage Facility for used nuclear fuel. (2012-2013).
- Drafted Reactor Safety Technologies R&D Program Plan for DOE-NE, involving major collaboration with DOE, national labs and industry. Developed strategies, justifications, budgets, etc. (2013-14)
- Supported DOE-NE in organizing and preparing for a DOE-NE experts meeting on Fukushima reactor inspection planning. Prepared the meeting summary, draft inspection matrix, and other materials for DOE use with Japan. Organized high level US - Japan Roundtable on Fukushima in Tokyo. (2013-14)
- Led an L&A team working with CBI under DOE IDIQ Task Order 15 to prepare "Feasibility Study for Large Casks in CPP-603" (INL). Served as primary editor of White Paper on options for opening large storage canisters in a dry environment; editor of final feasibility report, and editor of follow-on report on modifications necessary for large casks to be off-loaded for testing of STADs in CPP-603. (2014-15)
- Led an L&A team working with CBI under DOE IDIQ Task Order 16 to prepare "Generic Design Alternatives for Dry Storage of Spent Nuclear Fuel." Primary editor of final report. (2014-2015)
- Served on L&A team to develop a Conceptual Design Report (CDR) for the Underground Ventilation System (UVS) for the Waste Isolation Pilot Project WIPP) in New Mexico. Drafted the CDR in accordance with DOE O 413.3B, which required summarizing the design and analysis work contained in over forty other supporting deliverables for this task. (2015)
- Conducted a review of review of all WIPP safety-significant System Description Documents (SDDs) against the Documented Safety Analysis (DSA); cross referenced DSA against SDDs. (2015-2016)
- Assisted NE-72 in organizing and supporting an LWR Technology Working Group of independent industry experts, including coordination with NEI, EPRI and INL. Based on WG input, drafted :"RD&D Needs for LWR Technology (March 2016), which documented current economic challenges and prioritized R&D needs for both currently operating LWRs and new LWRs. (2015-16)
- Authored the CDR for the WIPP Above Ground Storage Capability (AGSC). (2016)
- Developed the Preliminary and Final Design Reports (PDR and FDR) for both the New Filter Building and the New Shaft at WIPP (separate line items in the WIPP UVS project). Prepared ten other supporting reports for these two projects. Audited SOW against both DOE O 413.3B and DOE-EM SRP to reconcile missing requirements. This project involved reviewing and summarizing all other supporting design and process documents into the PDR and FDR (over 50 each), such as functions and requirements, cost and schedule analyses, QA and ISMS Plans, security plans, project controls, EVMS description, techniques, and account plans, etc. Demonstrated expertise in analyzing multiple documents, aligning requirements and then ensuring compliance of deliverables. (2016-17)
- Leading an L&A team working with APTIM (formerly CBI) under DOE contract to prepare "Interim Storage Facility (ISF) Generic Design Report" for commercial spent nuclear fuel, along with its associated Topical Safety Analysis Report (TSAR) for review and approval by NRC. Prepared Functions and Requirements for the ISF. Primary editor of final Generic Design Report. (2017)

Executive Director, Federal and Industry Activities, Nuclear Sector – Electric Power Research Institute (EPRI)
Washington DC

1991-2008

- Served as management liaison to NEI, INPO, reactor owners groups, NRC, DOE, other Federal agencies, and the Idaho National Lab. Reported directly to EPRI Vice President/Chief Nuclear Officer.
- Managed all interface issues, cooperative initiatives and EPRI technical support with each of these organizations, including drafting and negotiation of Memoranda of Understanding (MOUs) with each.
- Wrote/edited most of the industry strategic plans for nuclear energy published by EPRI or jointly with DOE, INL or NEI over these two decades, resulting in utility executive endorsement of a consensus nuclear R&D agenda, and Federal funding to R&D of importance to the nuclear industry. Formulated cost-sharing strategies for industry-government partnerships in executing these plans.
- Supported initiatives and joint efforts with NEI, DOE and NRC for new plants, including service on industry committees and development of generic resolutions to new plant technical/regulatory issues:
- Served as key interface between EPRI technical experts and NEI staff on nuclear fuel cycle and used fuel issues and analyses, including Yucca Mountain standards and capabilities, spent fuel storage and transportation, nuclear fuel reprocessing, impacts of high burnup fuel on spent fuel management, etc.
- Coordinated EPRI review of NRC's 1996 "Direction Setting Initiatives," resulting in a Commission decision to allow limited collaborative R&D between industry and NRC, leading to the EPRI-NRC MOU on cooperative nuclear safety research in 1997. Negotiated a major revision to this MOU in 2007.
- Represented U.S. industry at various International Atomic Energy Agency (IAEA) meetings and conferences; co-authored various IAEA consensus reports and technical documents ("TECDOCs") on reactor safety principles and standards. Supported updates to International Nuclear Safety Advisory Group (INSAG) safety reports.

Program Manager – EPRI ALWR Program
Palo Alto CA

1988-1990

- Managed completion of Evolutionary ALWR Utility Requirements Document (URD) – consensus utility design requirements for next generation of standardized ALWRs. Helped the URD gain "user bid spec" credentials with reactor vendors and NRC. Obtained NRC approval of Evolutionary URD.
- Partnered with NUMARC to resolve open regulatory issues and design optimization issues via URD approval process, including seismic and severe accident response and containment performance.
- Developed 3-party MOU with DOE and suppliers for financing of passive plant development. Led negotiations to reach agreement with W & GE on royalty payments to EPRI, utility sponsors and DOE.

Executive Liaison – Nuclear Management & Resources Council (NUMARC, now NEI)
Washington DC

1987-1988

- Selected as first EPRI Executive Liaison to NUMARC, created in 1987 to provide a unified nuclear industry approach to resolution of generic regulatory and technical issues and to interact with NRC.

Project Manager – Nuclear Safety Analysis Center, EPRI
Palo Alto CA

1981-1986

- Analyzed and prepared reports on nuclear plant operating experience and safety-significant events.
- Managed all EPRI work on "Shutdown Decay Heat Removal" issue (DHR, classified by NRC as a high priority generic safety issue). Served as matrix manager across EPRI to integrate all aspects of issue.
- Managed industry technical analysis and joint response to the Chernobyl accident: coordinated analysis of RBMK reactor design and causes of accident; selected to U.S. delegation to post-accident conference at IAEA; co-authored Industry Position Paper and Industry Response Plan to Chernobyl. Authored Safety Analysis chapter of joint U.S. government - industry report on Chernobyl accident.

U.S. Navy Reserve
Senior Leadership Positions in CA, VA, and Washington DC; Two Years in Admiral Billet

1981-2000

Served 13 years in Submarine Reserve units, 4 years in Office of Naval Research units and 2 years in a Joint Command unit. Selected to four (maximum limit) Commanding Officer tours (three submarine units and one research unit). Commanded the senior coordinating unit over the entire Submarine Reserve (~4000 officers/enlisted). Served in Admiral billet in Pentagon (Deputy Director Submarine Warfare (Reserve Affairs)). Retired in Oct. 2000 as a Captain with 30 years' service; held Top Secret Clearance.

U.S. Navy Submarine Officer
Shipboard Leadership Positions; Major Command Staff Assignment

1971-1981

Served seven years on USS Thomas Edison (SSBN-610) & USS Bluefish (SSN-675). Edison: every nuclear division officer position and supervision of reactor refueling overhaul. Bluefish: Navigator/Operations Officer (3rd senior officer). Served on COMSUBLANT Staff as Force Sonar Officer.

EDUCATION

MS in Physics, U.S. Naval Postgraduate School, 1971 (specialties in nuclear and solid state physics)

BS with distinction, U.S. Naval Academy, 1970 (graduated in top 5%; majors in Physics & Mathematics)