

GARY L. VINE

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), eight years as an independent nuclear consultant, and ten years Navy experience on nuclear submarines.

EXPERIENCE (Relevant to DOE Projects)

Independent Consulting Assignments, 2008-2015:

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) at the request of DOE-NE. The resulting White Paper (2009) focused on helping refine GNEP program content and rationale in ways that would increase the level of understanding and support among a broader base of stakeholders and decision makers. It 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. It included a review of EPA regulations and relevant court decisions impacting the reliability, performance, and environmental protection of U.S. nuclear power plants cooling systems. Also co-authored follow-on EPRI report, "Tradeoffs between Once-Through Cooling and Closed-Cycle Cooling for NPPs."
- Conducted a number of timely reviews of technical and policy issues for DOE, including potential DOE actions to help revitalize nuclear energy, draft R&D strategic plan reviews, analysis of historic context and risk potential for the Standby Support program mandated by the 2005 Energy Policy Act, life extension of the current nuclear fleet beyond 60 years, and level of industry cost-sharing support that could be anticipated (2008-2012).
- Independent technical review of design, operational and deployment issues associated with SMRs (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" (awaiting publication) 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 report, "Strategy for Deployment of Advanced LWR Fuels," a business case for broad implementation in both current and future LWRs, under an industry-DOE partnership (2011).
- Co-authored "Advanced Manufacturing Technology Roadmap for the Nuclear Energy Sector" (Sept. 2012).
- Led a ten-person L&A team (working with Shaw [now CB&I]) under IDIQ Task Order #11 to develop design concepts and alternatives for a Consolidated Storage Facility for used nuclear fuel. (2012-2013).

- Organized and drafted the Reactor Safety Technologies R&D Program Plan for DOE-NE, involving extensive 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, organized with a concurrent Fukushima Technical Evaluation Project Review conducted by EPRI. Prepared the meeting summary, draft inspection matrix, and other materials for DOE use with Japan. (2013-14)
- Led an L&A team working with CBI under IDIQ Task Order 15 to prepare report for DOE, “Feasibility Study for Large Casks in CPP-603.” 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, and the capability to load and seal EM canisters in CPP-603.
- Led an L&A team working with CBI under IDIQ Task Order 16 to prepare report for DOE, “Generic Design Alternatives for Dry Storage of Spent Nuclear Fuel” Served as primary editor of final report. (2014-2015)
- Served on L&A team to develop and deliver a Conceptual Design Report for the Underground Ventilation System for the Waste Isolation Pilot Project (WIPP) in New Mexico. Drafted main CDR in accordance with DOE O 413.3B that integrated the design and analysis work contained in over forty other supporting deliverables for this task.
- Conducted a detailed review of review of all WIPP safety-significant System Description Documents (SDD’s) against the Documented Safety Analysis (DSA); cross referenced the DSA against the SDD’s. (2015-2016)
- Authored the Conceptual Design Report (CDR) for the WIPP Above Ground Storage Capability (AGSC). (2016)

Electric Power Research Institute (EPRI) Washington DC**Executive Director, Federal and Industry Activities, Nuclear Sector****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 and Chief Nuclear Officer.
- Managed all interface issues, cooperative initiatives and EPRI technical support with each of these organizations. Drafted and negotiated Memoranda of Understanding (MOUs) with these organizations.
- Wrote / edited many of the industry strategic plans for nuclear energy published by EPRI or jointly with DOE, INL or NEI over the last 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. Conducted supporting analyses. Formulated cost-sharing strategies for industry-government partnerships in executing these plans.
- 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.

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. Successfully obtained chapter-by-chapter 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 and GE on royalty payments to EPRI, utility sponsors and DOE.

Executive Liaison to Nuclear Management & Resources Council (NUMARC, now NEI) 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 on these issues.

Project Manager, Nuclear Safety Analysis Center, EPRI Palo Alto CA 1981- 1986

- Analyzed and prepared reports on nuclear power plant operating experience and safety-significant events.
- Managed all EPRI work on “Shutdown Decay Heat Removal” issue (DHR, classified by the 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 in Vienna Austria; co-authored Industry Position Paper on Chernobyl accident and Industry Response Plan. Authored Safety Analysis chapter of joint U.S. government - industry report on Chernobyl accident.

1981- 2000

U.S. Navy Reserve

Senior Leadership Positions in CA, VA, and DC; Two Years in Admiral Billet

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 from Naval Reserve in Oct. 2000 as a Captain with 30 years’ service; held Top Secret Clearance.

U.S. Navy Submarine Officer

1971- 1981

Shipboard Leadership Positions; Major Command Staff Assignment

Served seven years onboard USS Thomas Edison (SSBN-610) & USS Bluefish (SSN-675). Edison assignments included every nuclear division officer position and supervision of reactor refueling overhaul. Bluefish assignment was Navigator/Operations Officer (third 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% with majors in Physics & Mathematics)