

Invitation for Public Comment on

**Dr. Mardy Kazarians, Dr. Najmedin Meshkati,  
Dr. Michael Quinn, and Dr. Raluca Scarlat**

As Candidates for Appointment to the Diablo Canyon Independent Safety Committee  
Term: July 1, 2024 through June 30, 2027

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On January 11, 2024, the California Public Utilities Commission (CPUC) announced it was seeking applications from qualified persons to become nominees to fill a vacancy on the Diablo Canyon Independent Safety Committee (Committee) for a three-year term beginning July 1, 2024.

The Committee consists of three members, one each appointed by the Governor, the California Attorney General, and the Chair of the California Energy Commission (CEC). The Committee assesses the safety of the operations of Pacific Gas and Electric Company's Diablo Canyon nuclear power plant and has authority to review quarterly reports and conduct on-site inspections. The Committee reports its observations and recommendations to PG&E annually; the Committee then transmits its report, along with PG&E's response, to the Governor, Legislature, the California Attorney General, the NRC, CEC, and the CPUC.

According to the procedures adopted by the Commission in Decision 07-01-028, updated in D.23-08-004 and PG&E Advice Letter 7034-E,<sup>1</sup> and codified by SB 846 in Public Utilities Code § 712.1(c), the President of the CPUC selects no more than three qualified candidates responding to the request for applications, plus the incumbent member whose term is expiring if the incumbent consents to reappointment. The CPUC will issue a resolution ratifying the President's selection of candidates for appointment. The Chair of the CEC shall appoint the Committee member for the term beginning on July 1, 2024, from the list of candidates selected by the President of the CPUC and ratified by the Commission.

Applications were received from Dr. Mardy Kazarians, Dr. Najmedin Meshkati, Dr. Michael Quinn, and Dr. Raluca Scarlat in response to the CPUC's January 11, 2024, announcement. Their qualifications are summarized below.

The CPUC welcomes public comments on the qualifications of Dr. Kazarians, Dr. Meshkati, Dr. Quinn, and Dr. Scarlat. Please e-mail comments to [david.zizmor@cpuc.ca.gov](mailto:david.zizmor@cpuc.ca.gov).

**Comments must be received via e-mail by April 5, 2024.**

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<sup>1</sup> PG&E Advice Letter 7034-E approving the third restatement of the DCISC Charter as authorized in D.23-08-004 is available at [https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC\\_7034-E.pdf](https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_7034-E.pdf).

## **Dr. Mardy Kazarians**

Mr. Kazarians, principal of Kazarians & Associates, Inc., has worked in the risk assessment, risk management and process safety fields since the early 1980s. He has conducted risk assessments for a wide range of systems and processes from nuclear power, nuclear fuel processing, chemicals processing, oil and gas refining and aerospace industries. As part of these projects, Dr. Kazarians has conducted risk assessments using a variety of methods, has developed safety risk management programs and helped owners and operators in implementing these programs.

Educated as a nuclear engineer from UCLA, he was one of the first students that studied WASH-1400. That study did not address fire risk within nuclear plants. After the Browns Ferry fire in 1975, Dr. Kazarians focused on fire risk initiated within a nuclear plant and developed the methodology for addressing that risk as part of his masters degree thesis and Ph.D. dissertation. He improved on that method by applying it to nuclear plants domestically and internationally. He had the opportunity to conduct fire risk at a large number of plants and review them done by others. Now he still remains one of the prominent leaders in fire risk for nuclear power plants.

The main part of fire risk was its uncertain and probabilistic nature. Dr. Kazarians studied probability theory, uncertainty analysis and statistical methods. These methods proved useful in his later career when the fundamental risk methods were applied to other processes.

Dr. Kazarians has made significant contributions to more than 16 major Fire PRAs and risk assessment projects for nuclear power plants in the U.S., Europe, Japan, and Russia. In the last twenty years, in addition to risk analyses of specific facilities, Dr. Kazarians has participated in several major projects for the U.S. Nuclear Regulatory Commission (NRC). He has reviewed the fire analysis portion of a large number of Independent Plant Evaluation for External Events (IPEEEs) submitted by various power utilities to the NRC.

He was the principal author of NUREG/CR-2258, the first comprehensive Fire PRA methodology treatise for nuclear power plants. Later, Dr. Kazarians contributed to the development of NUREG/CR-6850, which was published in 2005 and provided the latest Fire PRA methodology and underlying data. He also contributed to the writing of ANS Standard on Fire PRA Methodology. Later he was hired by the Japanese utilities to rewrite NUREG/CR-6850 using the latest developments. He put together a team of experts for this task and the methodology document was published in 2019.

Dr. Kazarians became an independent consultant in 1992 and provided consulting services to non-nuclear clients as well as nuclear power clients. He applied the same methods to non-nuclear processes and presented them to owners and operators of those processes. As part of that, he learned the importance of training and operating procedures. He implemented his ideas on safe plant operation from small water treatment operations to large refineries. He learned about the methods and processes of water and

wastewater treatment, aerospace manufacturing, chemicals processing and oil and gas refineries.

## **Dr. Michael Quinn**

Michael Quinn is a seasoned nuclear executive operations assessor and consultant who has been continuously engaged in commercial nuclear or government nuclear reactor sites since 1975. During this time he has assessed: nuclear operations; supporting technical disciplines; and nuclear site nuclear safety management systems' performance at over 40 nuclear units in the in the U.S. and Canada.

A native of Connecticut, Michael has invested nearly 50 years into the public health and safety of the nuclear power industry, entailing 25 years as a licensee in the operations power block at a nuclear power station, followed by the past 24 years as an executive operations assessor and consultant to nuclear facilities in the U.S. and Canada.

### **Cumulative Nuclear Operations Assessment Experience**

The first 25 years of Michael's nuclear industry experience entailed becoming qualified and subsequently becoming an authority in nuclear operations and supporting technical disciplines that are essential to understanding the safe operation risk envelope and governance of a nuclear power reactor plant and overall station performance.

During Michael's tenure as a licensee within the power block of a Westinghouse pressurized water reactor station (Diablo Canyon is a Westinghouse-designed PWR), he earned a US NRC Senior Reactor Operator License (SRO), which he maintained for 15 years. During this time frame Michael was a member of the senior station leadership team at Haddam Neck Station, a nuclear unit that consistently performed at U.S. NRC SALP-1 and INPO-1 performance levels (presently termed U.S. NRC ROP Column 1 and INPO-1 respectively).

Positions held: Director of Nuclear Station Services; Nuclear Station Duty Officer; Chair-Nuclear Plant Operations Review Committee [operations oversight including 50.59 Reviews]; Corrective Action Review Board (CARB) Chair; Director of Nuclear Station Emergency Operations (DSEO); Refueling and Maintenance Outage Shift Manager; Manager of Chemistry and Radiochemistry. His last licensee position was as a Recovery Project Manager, reporting to the President, on a three-unit, four-year Nuclear Station Recovery Team (Millstone Nuclear Power Station 1995-1999).

As an executive operations assessor over the last 24 years, Michael has applied and assessed the three cross-cutting underpinnings of nuclear power operations in a high-reliability organizations e.g., nuclear power facilities: Human Performance, Problem Identification and Resolution, and Safety Culture/Safety Conscious Work Environment as they contribute to the effective implementation of the seven cornerstones of a nuclear station's operations,<sup>2</sup> which Michael has also assessed at nuclear facilities in the US and Canada: Initiating Events, Mitigating Systems, Public Radiation Safety, Barrier Integrity, Occupational Radiation Safety, Emergency Preparedness, and Security/ Safeguards.

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<sup>2</sup> US NRC Reactor Oversight Program

Since 1999 Michael has provided independent evaluations and assessments of nuclear facilities in the United States and Canada<sup>3</sup> on the seven cornerstones and three cross-cutting areas as they underpin nuclear operations and high reliability performance.

While in his varied assignments he has assessed nuclear operations, incidents, significant events, and trends; then has developed informed, balanced observations, conclusions, and recommendations based on facts and empirical evidence, and not on what some may have wanted the facts to be.

In his assignments Michael has provided independent assessments to utility executives, nuclear operations management, federal and state agencies, from which recommended corrective actions have addressed the substantive problems, the causal factors that enabled the problems, and the processes that should have identified and addressed the causal factors at an earlier, safer, more risk compliant time. He has presented findings in closed and open settings, as well as in public forums with regulators, town halls, and public stakeholders.

Following are a few independent assessment examples Michael has been engaged in:

- January 2024: member of a two-person independent team completed a several month safety culture/safety conscious work environment assessment at Columbia Nuclear Generating Station in Richland, WA
- In 2023 led an independent team that assessed Safety Culture and technical programs at the NIST Center for Neutron Research (NCNR) in Gaithersburg MD; there had been a significant reactor event in 2021 that resulted in nuclear fuel damage (melted fuel); the reactor had been shut down for two years and placed into Column 4 of US NRC IP 95003. Access the publicly available team report here:
  - o <https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML23207A041>
- In 2022, led an independent Team that assessed, over several months, a series of significant events, Conduct of Operations, and Safety Culture, at the Department of Energy's trans-uranic waste repository Waste Isolation Pilot Plant (WIPP) outside Carlsbad, NM
- Provided requested independent assessments of significant and 'unplanned' nuclear events at >20 nuclear power units in the United States and Canada 2000-2022 (e.g., reactor transients, transuranic uptakes, program breakdowns)
- Conducted independent Operational Reliability assessments at >20 nuclear facilities in the US and Canada 2000-2022
- Conducted Technical Engineering Rigor and ConOps assessments, including 15 nuclear safety-related units/facilities (e.g., a large Department of Energy engineering remediation project for management of 50MM gallons of nuclear mixed waste; and an Independent Spent Fuel Storage Installation [ISFSI]);

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<sup>3</sup> Canadian Nuclear Safety Commission Compliance Verification Program

- Member of a team that conducted a several month Reliability Assessment of Vermont Yankee for the State of VT: Lead assessor of the Root Cause process within the Corrective Action Program evaluation, for feasibility of plant license extension beyond the 40-year license
- Taught Operational and Event Causal Analysis (a 24-hour course) to the US Nuclear Regulatory Commission over 50 times entailing >600 Inspectors and technical staff; contracted 2006-2023 (in this course Dr. Quinn and a colleague have taught US NRC staff how to evaluate nuclear station event analysis reports and their associated corrective action implementation effectiveness; this training also entailed teaching safety culture assessment)
- Taught Operational and Event Causal Analysis (the 24-hour course adapted) to the Japan Nuclear Regulation Authority (JNRA) staff as well as to Canada Nuclear Safety Commission (CNSC) staff.

### **What Dr. Quinn can bring to the DCISC:**

Upon appointment Dr. Quinn expects to bring a current and comprehensive nuclear operations assessment body of work experience to the Committee. Additionally, his first-hand experience assessing significant challenges that have impacted nuclear facilities scheduled for shutdown . . . while still safely operating to the final “breaker opening.” This assessment experience applies to Diablo Canyon in the context of a permanent shutdown at some point:

- Assessing factors for maintaining Operational Excellence prior to permanent shutdown
- Assessing factors that maintain (or indicate decline in) conduct of operations focus on and fidelity to plant systems, structures, and components; as well as to procedure, program, policy, and license requirements
- Assessing extent to which the organization maintains the expected performance level of the cross-cutting areas: Safety Culture, Human Performance, and PI&R, as the station approaches permanent shutdown

### **Closing**

Michael earned a Doctorate in Organizational Management Systems (organizational system dynamics), and prior to that effort he had completed an Executive Master of Business Administration degree and had earned a Bachelor of Science degree in Chemistry. Other endeavors include:

- Certified Root Cause Investigator (Nuclear Safety Review Concepts Event Evaluation)
- Certified Root Cause Training Instructor
- Certified Radiation Safety Officer
- Dozens of written technical assessment reports on nuclear facility events and issues
- Over 20 invited talks and nuclear conference presentations (available on request)

- Having taught 24 full semester courses (including System Dynamics and Strategic Management/Decision Making courses) at Central Connecticut State University

His collective current and past nuclear power experience is congruent with the Diablo Canyon Independent Safety Committee's (DCISC) mission and requirements. He can bring current and comprehensive assessment experience, from dozens of nuclear facilities, specific to nuclear oversight's seven cornerstones and the three cross-cutting areas: safety culture; human performance; and problem identification and resolution, to supplement the depth and breadth of the DCISC team.

Dr. Quinn has a demonstrated history of articulating his assessments in an objective, empirically-based, and plain language manner to a spectrum of stakeholders (e.g., utility commissions, the public, station staff, state and federal regulators, interest groups, and the boardroom).

On a personal note:

From 2002-2011 and 2012-2021, Dr. Quinn served on the Connecticut Community Care Inc. (CCC) Board of Directors, a non-profit health care service provider of 250 employees who are responsible for over 9,000 compromised individuals in need. His last CCC role was Chair of the Board.

Michael is a four-decade American Red Cross blood donor.

LinkedIn: <https://www.linkedin.com/in/quinnmd/>

Michael D. Quinn, Sc.D. February 25, 2024

## **Dr. Najmedin Meshkati**

Dr. Najmedin Meshkati is a (tenured, full) Professor of Civil/Environmental Engineering, Industrial & Systems Engineering; and International Relations at the University of Southern California (USC); an Associate (ex-Research Fellow) with the Project on Managing the Atom at Belfer Center for Science and International Affairs at Harvard Kennedy School; and has been an Associate with the Mossavar-Rahmani Center for Business and Government at Harvard (2018-2020).

Meshkati was a Jefferson Science Fellow and a Senior Science and Engineering Advisor, Office of Science and Technology Adviser to the Secretary of State, US State Department, Washington, DC (2009-2010). He is a Commissioner of The Joint Commission (a not-for-profit organization that accredits and certifies thousands of healthcare organizations and programs in the United States and operates in many countries around the world) and on the Governance Board of the Patient Safety Movement Foundation. He is a member of the NASEM (National Academies of Sciences, Engineering and Medicine) Gulf Offshore Energy Safety (GOES) Board and served for two terms (2016-2022) on the NASEM Board on Human-Systems Integration (BOHSI). In January 2023, he was appointed to the FAA Expert Panel to conduct a congressionally-mandated review of Boeing's safety management processes and Boeing's safety culture as a part of the Aircraft Certification, Safety & Accountability Act (ACSAA), Section 103 Organization Designation Authorization (ODA). He has served as a member of the Global Advisory Council of the Civilian Research and Development Foundation (CRDF) Global, chaired by Ambassador Thomas R. Pickering (2013-2016).

For the past 38 years, he has been teaching and conducting research on risk reduction and reliability enhancement of complex technological systems, including nuclear power, aviation, petrochemical and transportation industries. He has been selected by the National Academy of Sciences (NAS), National Academy of Engineering (NAE) and National Research Council (NRC) for his interdisciplinary expertise concerning human performance and safety culture and served as member and technical advisor on two national panels in the United States investigating two major recent accidents: The NAS/NRC Committee "Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants" (2012-2014); and the NAE/NRC "Committee on the Analysis of Causes of the Deepwater Horizon Explosion, Fire, and Oil Spill to Identify Measures to Prevent Similar Accidents in the Future" (2010-2011).

Dr. Meshkati has inspected many petrochemical and nuclear power plants around the world, including Chernobyl (1997), Fukushima Daiichi and Daini (2012). He has worked with the U.S. Chemical Safety and Hazard Investigation Board, as an expert on human factors and safety culture, on the investigation of the BP Refinery explosion in Texas City (2005) and served as a member of the National Research Council (NRC) Committee on Human Performance, Organizational Systems and Maritime Safety. He also served as a member of the NRC Marine Board's Subcommittee on Coordinated R&D Strategies for Human Performance to Improve Marine Operations and Safety.



Dr. Meshkati is the only full-time USC faculty member who has continuously been conducting research on human factors and aviation safety-related issues (e.g., cockpit design and automation, crew resource management, safety management system, safety culture, and runway incursions,) and teaching in the USC 69-year-old internationally renowned Aviation Safety and Security Program, for the past 30 years. During this period, he has taught in the “Human Factors in Aviation Safety” and “System Safety” short courses. From 1992 to 1999, he also was the Director and had administrative and academic responsibility for the USC Professional Programs, which included Aviation Safety, as well as for the Transportation Safety, and Process Safety Management (which he designed and developed) programs. He has worked with numerous safety professionals from all over the world and has taught safety short courses for private and public sector organizations, including the US Navy, US Air Force, US Forest Service, California OSHA, Celgene, Metrolink, Exelon, FedEx, the Republic of Singapore Air Force, Singapore Institution of Safety Officers, China National Petrochemical Corporation, Canadian upstream oil and gas industry (Enform), Korea Hydro and Nuclear Power (KHNP), Ministry of Foreign Affairs (Republic of Korea), etc.

Dr. Meshkati has been recognized by the Human Factors and Ergonomics Society (HFES) in 2022, as an inaugural “Titan of HFES”; he an elected Fellow of the HFES; the 2015 recipient of the HFES highest award, the *Arnold M. Small President’s Distinguished Service Award*, for his “career-long contributions that have brought honor to the profession and the Society”; and the 2007 recipient of the HFES *Oliver Keith Hansen Outreach Award* for his “scholarly efforts on human factors of complex, large-scale technological systems.” He is the inaugural recipient of the *Ernest Amory Codman Lectureship and Award* (from The Joint Commission for his leadership and efforts in continuously improving the safety and quality of care). He is an AT&T Faculty Fellow in Industrial Ecology, a NASA Faculty Fellow (Jet Propulsion Laboratory, 2003 and 2004), and a recipient of the *Presidential Young Investigator Award* from the National Science Foundation (NSF) in 1989.

He has received numerous teaching awards at USC, which include the 2013 Steven B. Sample Teaching and Mentoring Award from the USC Parents Association, the 2000 *TRW Award for Excellence and Outstanding Achievement in Teaching* from the USC Viterbi School of Engineering; the 1996, 2003, 2006, 2007, 2008 and 2016 *Professor of Year Award (Excellence in Teaching and Dedication to Students Award)* from the Daniel J. Epstein Department of Industrial & Systems Engineering; the Mortar Board’s *Honored Faculty Award* (2007-2008) from the University of Southern California’s Chapter of the Mortar Board; and the *Outstanding Teaching Award* from The Latter-day Saint Student Association at USC (April 11, 2008). He was chosen as a *Faculty Fellow* by the Center for Excellence in Teaching, USC (2008-2010).

He is the co-editor and a primary author of the book *Human Mental Workload*, North-Holland, 1988. His articles and commentaries on public policy; the risk, reliability, and environmental impact of complex, large-scale technological systems; and foreign policy-related issues have been published in several national and international newspapers and

magazines such the *New York Times*, *International New York Times (International Herald Tribune)*, *Los Angeles Times*, *Washington Post*, *Wall Street Journal*, *Financial Times*, *The Economist*, *The Hill*, *Baltimore Sun*, *Charleston Gazette*, *Houston Chronicle*, *Sacramento Bee*, *MIT Technology Review*, *Japan Times*, *Korea Herald (South Korea)*, *Strait Times (Singapore)*, *Times of India*, *Hurriyet Daily News (Turkey)*, *Gulf Today (UAE)*, *The Nation (UAE)*, *Gulf News (Qatar)*, *Iran News (Iran)*, *Shargh (Iran)*, *South China Morning Post (Hong Kong)*, *Winnipeg Free Press*, *Waterloo Region Record*, *Windsor Star (Canada)*, *Scientific Malaysian*, etc.

As chairman of the “group of experts” of the International Ergonomics Association (IEA), Dr. Meshkati coordinated international efforts which culminated in the joint publication of the United Nations’ International Labor Office (ILO) and IEA *Ergonomic Checkpoints: Practical and Easy-to-Implement Solutions for Improving Safety, Health and Working Conditions* book in 1996, for which he received the Ergonomics of Technology Transfer Award from the IEA in 2000. According to the ILO, this book has so far been translated and published into 16 languages including Arabic, Bahasa Indonesia, Bahasa Malaysian, Chinese, Estonian, Farsi, French, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Thai, Turkish, and Vietnamese. The second edition of this book was released by the ILO/IEA in 2010.

Dr. Meshkati simultaneously received a B.S. in Industrial Engineering and a B.A. in Political Science in 1976, from Sharif (Arya-Meher) University of Technology and Shahid Beheshti University (National University of Iran), respectively; a M.S. in Engineering Management in 1978; and a Ph.D. in Industrial and Systems Engineering in 1983 from USC. He is a Certified Professional Ergonomist.

## **Dr. Raluca Scarlat**

Professor Raluca O. Scarlat is an Associate Professor in the Nuclear Engineering Department at the University of California Berkeley. Her research encompasses chemistry and materials for nuclear fusion and fission energy and other clean energy applications, such as solar energy, batteries, and critical minerals. She has expertise in electrochemistry and physical chemistry of high-temperature molten salt and graphite, corrosion, tritium management, advanced nuclear reactors, safety analysis, and engineering ethics.

Scarlat attended high school in Fremont, CA for two years, and community colleges in Cupertino, Los Altos Hills, San Mateo, and Redwood City, CA, and for the subsequent two years. She completed her undergraduate studies at Cornell University in Ithaca, NY, where she studied chemical and biomolecular engineering for three years, during which she completed two engineering co-op semesters with GE Silicones and the GE Global Research center, interfacing with plant and unit operators, chemical engineers deploying new products, and chemists developing new synthetic pathways for new products. She graduated cum laude in May 2006. where Scarlat worked as a chemical engineer for ExxonMobil, developing and deploying abnormal event detection applications for petrochemical plants, and training engineers and operators in the development and use of advanced controls applications; she received a Leadership Award from the ExxonMobil Automation & Optimization Division in Dec. 2006.

In 2007, Scarlat joined the University of California Berkeley for graduate studies in nuclear engineering to study safety analysis of large complex systems, and to understand what role nuclear energy can play in energy portfolios. For her work as a teaching assistant in thermodynamics, she was recognized with the Outstanding Graduate Student Instructor in 2008. In 2009, Scarlat completed an M.S. in the Nuclear Engineering Department, and a Certificate in Management of Technology from the Haas School of Business and was awarded an Excellence Award in Nuclear Energy Fuel Cycle R&D from the US Department of Energy in 2009, and a three-year Graduate Fellowship from Nuclear Engineering University Programs (NEUP) of the US Department of Energy. In fall of 2011, after the Fukushima Dai-Ichi Nuclear Power Plant accident, Scarlat joined Hitachi GE, in Ibaraki Prefecture, Japan, for an engineering internship, to study severe accident progression at Fukushima Dai-Ichi Units 1 and 2, for the purpose of making recommendations for improving severe accident management at the boiling water reactors. (BWRs) in Japan. In 2012, she completed her Ph.D. in Nuclear Engineering with Designated Emphasis in Energy Science and Technology. She continued research on advanced reactor licensing at UC Berkeley until 2014, when she joined as faculty at University of Wisconsin Madison, in the field of thermal-hydraulics and reactor safety.

In January 2019, she joined the University of California Berkeley, as faculty in the nuclear engineering department, in the field of chemistry, materials, and reactor safety. She teaches courses on nuclear fuel cycle, materials and chemistry, and thermodynamics. She serves as the head undergraduate curriculum adviser for the Department of Nuclear Engineering and chairs the committee on ethics and social responsibility for the College

of Engineering. She has built that SALT research group, with cutting edge capabilities in high temperature experimental studies for molten salts and high temperature materials, with the unique capability of handling both beryllium, which is respiratory and dermal hazard, and radioactive materials; in the current semester, there are eight graduate students, two postdoctoral scholars, and fifteen undergraduate students training and performing research in the SALT Lab. Prior students and postdoctoral scholars are now faculty, research scientists at national laboratories, and engineers in advanced reactor companies.

Prof. Scarlet has co-authored 42 journal publications, 37 refereed conference proceedings, and a book chapter. Prof. Scarlet has been awarded the American Nuclear Society (ANS) Mary Jane Oestmann Professional Women's Achievement Award in 2021. She has served as a working group member for the Development of ANS 20.2 Standard, "Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel Molten Salt Reactor Nuclear Power Plants.," and on the American Society of Mechanical Engineers (ASME) standards task group on graphite issues for Molten Salt Reactors (MSRs). Prof. Scarlet serves on the Nuclear Energy Advisory Committee (NEAC) for the US Department of Energy, Office of Nuclear Energy. She serves on the Nuclear Safety Committee and the Advisory Committee for UC Davis' McClellan Nuclear Research Reactors in Sacramento, CA.

Employing nuclear energy relies on a strong social contract. It relies on stable institutions, on an independent regulator to ensure adequate operation, maintenance, and inspection of the plants, it relies on risk communication and engagement with local communities – it relies on transparency, and enabling the local communities to have agency in how the risks to their community are managed and communicated; the definitions of acceptable and unacceptable risk are and should continue to be defined by society, and it is the engineer's role to implement the society-defined goals for the management and communication of risks. Guided by these principles, professor Scarlet applies her expertise in the areas of (1) Nuclear Reactor Safety and Thermal-Hydraulics, (2) Materials and corrosion, (3) Plant Operation, and (4) Engineering Ethics.

These areas are of relevance to (1) understanding inspection and maintenance, sensor calibration, interfacing with Nuclear Regulatory Commission (NRC) inspections, necessary operator and staff training, human factors considerations, regulations and procedures, severe accident management guidelines, understanding application of safety principles, functioning principles of passive and active safety systems, probabilistic risk assessment for the units; (2) corrosion control, materials degradation, environmental monitoring and transport of radioisotopes in the environment; (3) adequate staffing and training, outage planning, sensors and controls, refueling operations, emergency preparedness, worker safety, and the role of the safety culture.