Resolution E-5001. Confirmation of candidates for appointment to the Diablo Canyon Independent Safety Committee (DCISC) for a three-year term beginning July 1, 2019.

PROPOSED OUTCOME:
- The California Public Utilities Commission ratifies the President’s selection of three candidates for consideration by the California Attorney General for appointment to the DCISC.

SAFETY CONSIDERATIONS:
- The DCISC reviews operations at Pacific Gas and Electric Company’s (PG&E) Diablo Canyon Power Plant (DCPP) for the purpose of assessing the safety of current operations and suggesting recommendations for continued safe operations. The appointed candidate will serve a three-year term on the DCISC.

ESTIMATED COST:
- All ongoing DCISC costs were funded previously. Ratification of the CPUC President’s selection of candidates for appointment to the DCISC will not result in any additional costs.

SUMMARY

The Diablo Canyon Independent Safety Committee (DCISC) consists of three members, each appointed in turn by the California Governor, the California Attorney General, and the Chair of the California Energy Commission (CEC), serving staggered three-year terms. Section 1.B of the restated charter of the DCISC describes the process for appointment of DCISC members: it requires the CPUC to select and forward to the appointing authority no more than three new candidates plus the incumbent for DCISC membership. The appointing authority for the current cycle is the California Attorney General. This Resolution ratifies the California Public Utilities Commission (CPUC) President’s selection of Dr. Robert Budnitz as a candidate for reappointment, and Dr. William Kastenberg, and Dr. Michael D. Quinn as candidates for appointment to the DCISC, for a three-year term commencing on July 1, 2019.

BACKGROUND

Establishment of the DCISC and Member Selection Process:

The CPUC created the DCISC in Decision (D.)88-12-083 as part of the overall settlement of ratemaking issues for the DCPP, which is owned and operated by Pacific Gas and Electric Company (PG&E). The DCISC is an independent, three-member committee responsible for monitoring the safety of PG&E’s operation of DCPP. The DCISC’s budget is paid out of PG&E’s revenues and charged to PG&E’s ratepayers.1 D.88-12-083 established the qualifications and procedures for appointment of members to the DCISC and defined the scope of the Committee’s operations and responsibilities.2 Membership on the DCISC is a compensated position.3

---

1 D.88-12-083, Appendix C, Paragraph 16.
2 D.88-12-083, Appendix C, Attachment A.
3 In Resolution E-3152, the Commission established that DCISC member compensation be set at levels commensurate with fees paid by PG&E for comparable services. The compensation levels set in E-3152 have been revised twice, most recently on
On October 24, 2006, the DCISC submitted Application (A.) 06-10-024 proposing a restated charter. The CPUC adopted the restated charter in D.07-01-028 on January 25, 2007.

Section 1.B of the restated charter describes the process for appointment of DCISC members. It requires the CPUC to select no more than three candidates for DCISC membership from among those applicants responding to an open request by the CPUC for applications. The incumbent member whose term is about to expire is to be deemed an additional candidate if he or she consents. The CPUC is charged with the responsibility to provide for public comment on the applicants’ qualifications and potential conflicts of interest. The President of the CPUC is to review the applicants’ qualifications, experience, and background, including any conflicts of interest, together with any public comments, and propose as candidates to the appointing authority only persons with knowledge, background, and experience in the field of nuclear power plants and nuclear safety issues. The Energy Division prepares a resolution ratifying the President’s selection of candidates for the Commission.

Current Applicants:

On December 19, 2018, an open request for applications to fill the July 1, 2019 vacancy on the DCISC was posted on the CPUC’s website.

April 1, 2011 in PG&E’s Advice Letter (AL) 3677-E-A. The levels established in that AL have been re-approved every year since 2011, including 2018 on April 5th in PG&E AL 5269-E. The current compensation levels are as follows: annual retainer of $10,000; $250/hour fee for attendance at DCISC meetings; $250/hour fee for DCISC work performed outside of committee meetings in excess of 40 hours/year; and reimbursement of expenses incurred in performance of DCISC work. PG&E submitted AL 5515-E on April 2, 2019 requesting the same DCISC compensation levels affirmed in AL 5269-E. Disposition of PG&E AL 5515-E is still pending.

4 A link to the announcement posted on the CPUC’s website was sent to the service lists of A.16-08-006 and A.18-12-008 to ensure that parties interested in issues relating to the DCPP were aware of the announcement. A.16-08-006 is the joint proposal to shut down the DCPP and A.18-12-008 is PG&E’s 2018 Nuclear Decommissioning Cost Triennial Proceeding.
Applications were timely received from Dr. William Kastenberg, and Dr. Michael Quinn. In addition, Dr. Robert Budnitz, the incumbent member of the DCISC whose term is set to expire, sent a letter to the Energy Division confirming his willingness to continue serving as a member of the DCISC.

Dr. Budnitz provided a synopsis of his technical experience and professional activities relating to nuclear reactor and radioactive waste safety, including his experience as a researcher and consultant both independently and with various federal entities. Dr. Budnitz was originally appointed to the DCISC on October 10, 2007 by the then Attorney General Edmund “Jerry” G. Brown Jr. Dr. Budnitz’s fourth term is set to expire on June 30, 2019.5

Dr. Kastenberg’s application details his recent experience as part-time Administrative Law Judge for the Atomic Safety and Licensing Board for the NRC, his teaching experience as a Professor of Nuclear Engineering at UCLA from 1966-1994 and as the Chair of the UC Berkeley Nuclear Engineering Department from 1994-2007, his graduate-level courses teaching basic theories of nuclear safety and risk, and his membership on and contributions to numerous nuclear-related committees. Dr. Kastenberg also discussed the 150 published papers he authored or co-authored. Dr. Kastenberg was the first appointee and first chairman of the DCISC having served for ten years following his appointment in 1990.

In Dr. Quinn’s application, he describes his experience working in the nuclear power industry, and consulting on nuclear operations and safety for industry clients as well as the U.S. and Canadian governments. Dr. Quinn was previously

---

5 See CPUC Resolution E-4109 (September 6, 2007), CPUC Resolution E-4307 (February 25, 2010), CPUC Resolution E-4588 (June 27, 2013), and CPUC Resolution E-4785 (June 23, 2016).
selected by the Commission as one of the qualified candidates considered for appointment in 2014, 2015, 2017, and 2018.\(^6\)

**Public Comments on Applicants:**

On February 19, 2019, an announcement was posted on the CPUC’s website inviting comments on the candidates.\(^7\) Summaries of their qualifications were included with the announcement. The full text of the public comments is included in Appendix B of this Resolution.

Comments in support of Dr. Quinn’s appointment were submitted by Brian Magnuson. Mr. Magnuson, the Lead Emergency Preparedness Specialist at Exelon Corporation, Senior Reactor Operator (inactive), and former Operations Shift Manager at Quad Cities (Illinois) Nuclear Power Plant, recommended Dr. Quinn based on his subject matter expertise in corrective actions and nuclear licensing issues, his ability manage risk, his character, and his long-term commitment to nuclear safety.

**NOTICE**

Notice of this Resolution was made by publication in the CPUC’s Daily Calendar. A copy of the Draft Resolution was sent to all of the applicants and to those submitting comments on their behalf. A copy of the Draft Resolution was also sent to the California Attorney General and to the service lists in PG&E’s Diablo Canyon Shutdown proceeding (A.16-08-006) and 2018 Nuclear Decommissioning Cost Triennial proceeding (A.18-12-008).

**DISCUSSION**

\(^6\) See CPUC Resolution E-4657 (June 12, 2014), CPUC Resolution E-4711 (February 26, 2015), CPUC Resolution E-4849 (June 16, 2017), and CPUC Resolution E-4936 (May 31, 2018).

\(^7\) A link to the announcement was also sent to the service lists in A.16-08-006 and A.18-12-008. See footnote 4 above.
The restated charter adopted in D.07-01-028 requires that candidates for appointment to the DCISC be persons with knowledge, background, and experience in the field of nuclear power facilities and nuclear safety issues who demonstrate they have no conflicts of interest.  

Summaries of the qualifications of each applicant are included in Appendix A of this Resolution.

**Dr. Robert J. Budnitz is qualified to continue to serve on the Diablo Canyon Independent Safety Committee.**

Dr. Budnitz is an incumbent member of the DCISC, having been appointed to his initial three-year term from July 2007 through June 2010 by then-Attorney General, Jerry Brown, who reappointed Dr. Budnitz for a second term from July 2010 through June 2013. Dr. Budnitz applied for reappointment to the DCISC in 2013. Even though the AG did not make an appointment in 2013 to fill the vacancy on the Committee, Dr. Budnitz, in accordance with DCISC and CPUC rules, continued to serve on the Committee. He was reappointed to a fourth term by then-Attorney General Kamala Harris in June 2016. In addition to serving on the DCISC, Dr. Budnitz recently retired from the scientific staff at Lawrence Berkeley National Laboratory (LBNL) where he researched the seismic safety of nuclear reactors. He still works as a consultant, advising on reactor safety both domestically and internationally. Prior to his time at LBNL, Dr. Budnitz spent more than 20 years as president of Future Resources Associates, Inc., a private consulting company he founded which specialized in reactor

---

8 Conflicts of interest guidelines are set forth in Section I.C of the restated charter. They establish limits for DCISC members on income and gifts from PG&E or an affiliated company, and investments in PG&E or an affiliate. They also prohibit members of the DCISC from attempting to use their position to influence action of the Committee in which they have a financial interest. DCISC members are required to file a Statement of Economic Interest in the same manner as designated CPUC employees. No person shall serve on the DCISC who has a prior history of supporting or opposing PG&E as a witness or intervenor in nuclear licensing or CPUC proceedings associated with the Diablo Canyon Power Plant.
safety, radioactive waste, and related subjects. This was followed by employment with Lawrence Livermore National Laboratory, which included two years with the Department of Energy’s Office of Civilian Radioactive Waste Management. Dr. Budnitz began his career at LBNL in 1967, where he eventually rose to the positions of Associate Director and Head of the Energy and Environment Division, followed by two years as a senior officer at the NRC, during which time he served as the technical coordinator for the NRC’s inquiry into the 1979 accident at Three Mile Island. Dr. Budnitz earned a Ph.D. in physics from Harvard University in 1968.

Dr. Budnitz has no conflicts of interest that would preclude his continuing to serve on the DCISC.9 His qualifications show that he has the requisite knowledge, background, and experience in the field of nuclear power plants and nuclear safety issues.

**Dr. William Kastenberg is qualified to serve on the Diablo Canyon Independent Safety Committee.**

Dr. Kastenberg is an original member of the DCISC, having been appointed to the Committee by Governor Deukmejian in 1990. In the ten years he served on the DCISC, Dr. Kastenberg not only gained an intimate knowledge of Diablo Canyon and its particular design, operations, personnel, licensing, and safety issues, but he also helped institute many of the Committee’s procedures and processes still in use today. Much of Dr. Kastenberg’s career has been spent teaching nuclear engineering, first at UCLA from 1966-1994, and then at UC Berkeley as the Chair of the Nuclear Engineering Department and the Daniel M. Tellep Distinguished Professor of Engineering from 1994-2007. He was among the first faculty nationwide to develop graduate-level courses on Fast Reactor Safety, Light Water Reactor Safety, and Nuclear Reactor Risk Analysis. As a professor, Dr. Kastenberg won several teaching awards from organizations including the American Nuclear Society (2000), the American Society for

---

9 By email to Energy Division staff dated January 3, 2019 Dr. Budnitz confirmed that he has no conflicts of interest as set forth in Section I.C. of the restated charter.
Engineering Education (1973), and the Engineering Graduate Students’ Association of UCLA (1970). Since his retirement from teaching in 2007, Dr. Kastenberg has served part-time as an Administrative Law Judge (Technical) on the Atomic Safety and Licensing Board for the NRC. Over the course of his career, Dr. Kastenberg served on many panels and committees, including California’s Scientific Panel of the Advisory Group on Low-Level Radioactive Waste, the Advisory Committee on Nuclear Facility Safety for the Department of Energy, and on the external safety review committees for each of the National Laboratories at Los Alamos, Lawrence Livermore, Argonne, and Brookhaven respectively. Dr. Kastenberg has B.S. and M.S. degrees in General Engineering from UCLA, and a Ph.D. in Nuclear Engineering from UC Berkeley.

Dr. Kastenberg has no conflicts of interest that would preclude his serving on the DCISC. His qualifications show that he has knowledge, background, and experience in the field of nuclear power plants and nuclear safety issues.

**Dr. Michael Quinn is qualified to serve on the Diablo Canyon Independent Safety Committee.**

Dr. Quinn has spent over forty years in the nuclear industry: since 1999 he has facilitated regulatory compliance, reliability assessments, and performance improvement in the commercial nuclear power industry; during the 25 years prior he worked in the power block of a nuclear unit for a large nuclear utility. His experience includes developing and delivering root cause evaluation training to NRC staff, assessing significant issues during refueling operations at nuclear power plants, and leading root cause assessments at nuclear facilities. Dr. Quinn has also managed a team that developed and implemented corrective actions to address performance resulting in radiation contamination of several hundred workers at the Bruce Nuclear Generating Station in Ontario, Canada. He has led teams in developing, implementing, and evaluating programs to establish a safety culture at nuclear power plants. Dr. Quinn was Manager of Nuclear Planning and Operational Standards for Northeast Nuclear Energy Company, and has held positions as Radio-Chemist, and Manager of Chemistry and Radiochemistry, in addition to other positions at the Connecticut Yankee Haddam Neck Nuclear Station. Dr. Quinn has a Doctorate in Organizational Management Systems and a Masters of Business Administration degree, both
from the University of New Haven, and a B.S. degree in Chemistry from Charter Oak College. He previously held a U.S. NRC Senior Reactor Operator License on a Westinghouse pressurized water reactor.

Dr. Quinn has no conflicts of interest that would preclude his serving on the DCISC. His qualifications show that he has knowledge, background, and experience in the field of nuclear power plants and nuclear safety issues.

The candidates nominated by the Commission are the most qualified candidates from the pool of applicants.

The CPUC’s President, Michael Picker, has reviewed the qualifications, experience, and backgrounds of all the applicants and selected Dr. Robert Budnitz, Dr. William Kastenberg, and Dr. Michael Quinn for submission to the Chair of the CEC as candidates for the three-year DCISC position beginning July 1, 2019.

President Picker’s selection of Dr. Robert Budnitz, Dr. William Kastenberg, and Dr. Michael Quinn as the candidates for the July 1, 2019 vacancy on the Diablo Canyon Independent Safety Committee is ratified.

President Picker’s selection of Dr. Budnitz as a candidate for reappointment, and Dr. Kastenberg and Dr. Quinn as candidates for appointment to the DCISC for a three-year term beginning July 1, 2019 is ratified. As mentioned above, President Picker recognizes that all of the applicants possess the qualifications to competently serve on the DCISC. The President’s selections shall be provided to the Chair of the CEC.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review. Please note that comments are due 20 days from the mailing date of this resolution. Section 311(g)(2) provides that this 30-day review period and 20-day comment period may be reduced or waived upon the stipulation of all parties in the proceeding.
The 30-day review and 20-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments, and will be placed on the Commission's agenda no earlier than 30 days from today.
FINDINGS

1. D.88-12-083 created the Diablo Canyon Independent Safety Committee (DCISC).

2. The DCISC is an independent, three-member committee responsible for monitoring the safety of PG&E’s operation of the Diablo Canyon Power Plant.

3. D.07-01-028 adopted a restated charter for the DCISC including revised procedures for appointments of DCISC members.

4. On December 19, 2018, in accordance with D.07-01-028, an announcement was posted on the CPUC’s website seeking applications for the July 1, 2019 vacancy on the DCISC.

5. The California Attorney General is the appointing authority for the July 1, 2019 vacancy on the DCISC.

6. Dr. Robert Budnitz, the incumbent member of the DCISC whose term expires on June 30, 2019, responded to the CPUC’s December 19, 2018 announcement and consents to being a candidate for reappointment to the DCISC.

7. Dr. William Kastenberg, an Administrative Law Judge, professor, and former member of the DCISC, responded to the CPUC’s December 19, 2018 announcement, and submitted an application to be considered as a candidate for appointment to the DCISC.

8. Dr. Michael Quinn, a professional nuclear energy consultant, responded to the CPUC’s December 19, 2018 announcement, and submitted an application to be considered as a candidate for appointment to the DCISC.

9. The CPUC invited comments on Dr. Budnitz’s, Dr. Kastenberg’s, and Dr. Quinn’s qualifications in an announcement posted on the CPUC’s website on February 19, 2019.

10. Comments supporting the appointment of Dr. Quinn to the DCISC were received in response to the CPUC’s February 19, 2019 announcement inviting comments.
11. The CPUC’s President, Michael Picker, has reviewed the qualifications, experience, and backgrounds of Dr. Budnitz, Dr. Kastenberg, and Dr. Quinn.

12. Dr. Budnitz, Dr. Kastenberg, and Dr. Quinn have knowledge, background, and experience in the field of nuclear power plants and nuclear safety issues, and are qualified candidates for appointment to the DCISC.

13. President Picker has chosen to provide the names of Dr. Budnitz as a candidate for reappointment, and Dr. Kastenberg and Dr. Quinn as candidates for appointment to the DCISC for a three-year term beginning July 1, 2019.

14. President Picker’s selection of Dr. Budnitz, Dr. Kastenberg, and Dr. Quinn as the candidates for appointment to the DCISC for a three-year term beginning July 1, 2019 should be ratified and provided to the California Attorney General.

THEREFORE IT IS ORDERED THAT:

1. President Picker’s selection of Dr. Budnitz, Dr. Kastenberg, and Dr. Quinn as qualified candidates for consideration by the California Attorney General for appointment to the Diablo Canyon Independent Safety Committee for a three-year term beginning July 1, 2019 is hereby ratified.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on June 13, 2019; the following Commissioners voting favorably thereon:

ALICE STEBBINS
Executive Director
APPENDIX A

The following statements were supplied by the applicants as part of the application process and were available for public review and comment starting on February 19, 2019. The assertions of fact contained within these statements have not been disputed. These statements are provided verbatim.
Dr. Robert Budnitz (Incumbent)

Dr. Budnitz is currently an incumbent member of the Diablo Canyon Independent Safety Committee (DCISC), serving a term that began July 1, 2016 and will end June 30, 2019, as appointed by then Attorney General Kamala Harris. Dr. Budnitz was originally appointed to the DCISC by then Attorney General Edmund G. Brown Jr. in 2007 for a term that ran through mid-2010.

In addition to his role on the DCISC, Dr. Budnitz recently retired from the scientific staff at the University of California's Lawrence Berkeley National Laboratory (LBNL), where he worked on nuclear power safety and security. He currently works as a consultant, advising on reactor safety both domestically and internationally. He is a member of the National Academy of Engineering. His current research is largely in the area of the seismic safety of nuclear reactors, most of which is supported by the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE). From 2002 to 2007, he was employed at UC’s Lawrence Livermore National Laboratory; during part of that period he also worked on a two-year special assignment in Washington D.C. assisting the Director of DOE’s Office of Civilian Radioactive Waste Management to develop a new Science & Technology Program for the Yucca Mountain Project. Dr. Budnitz additionally serves on advisory committees for organizations such as the American Nuclear Society and the American Society of Mechanical Engineers.

From 1967 to 1978, Dr. Budnitz was on the staff of the Lawrence Berkeley National Laboratory, serving in 1975-1978 as Associate Director and Head of LBNL's Energy & Environment Division. The programs under his direction included energy-efficiency, deep-geologic radioactive waste disposal, solar energy, geothermal energy, fusion energy, transportation technology, chemical-engineering for alternate fuels, environmental instrumentation, air-pollution phenomena, and energy policy analysis.

From 1978 to 1980, he was a senior officer on the staff of the NRC. In 1978-1979, he was the Deputy Director, NRC Office of Nuclear Regulatory Research, and in 1979-1980 he became the Director of that same Office. In this two-year period, Dr. Budnitz was responsible for formulating and guiding the large NRC research program that constituted over $200 million/year at the time. His responsibilities included assuring that all major areas of reactor-safety research, waste-management research, and fuel-cycle-safety research necessary to serve the mission of the NRC were adequately supported. Additionally, following the
Three Mile Island reactor accident, Dr. Budnitz served the last 7 months of 1979 as the “technical coordinator” of the important NRC internal inquiry examining the accident, known as the “Special Inquiry Group.”

After leaving the NRC in 1980 and until late 2002, Dr. Budnitz worked as a private consultant on reactor safety, radioactive waste, and related subjects, as president of Future Resources Associates, Inc., a small firm he founded in Berkeley in 1981. His clients included both industrial and governmental organizations. A majority of his research support in the post-1981 period came from governmental sources, including NRC, DOE, and the U.S. Environmental Protection Agency, as well as international and intergovernmental organizations such as the International Atomic Energy Agency, OECD Nuclear Energy Agency, and the European Bank for Reconstruction and Development.

After the serious Japanese reactor accident at Fukushima in March 2011, caused by an earthquake-triggered tsunami that flooded the site and damaged 4 of the 6 reactors on-site, the U.S. Secretary of Energy and the President’s Science Adviser appointed a special “science panel” to advise them about the best way early-on to interpret the incomplete technical information that was available from Japan, and about how best the U.S. might assist the Japanese in responding. Dr. Budnitz served on that high-level panel for the duration of 2011.

Some of Dr. Budnitz’s other assignments include serving as chairman of an OECD/NEA international Specialist Meeting that evaluated the adequacy of our current understanding of possible terrorist attacks on nuclear facilities, a few months after the terrorist attacks on New York and Washington on 9/11/2001; he chaired the “Senior Seismic Hazards Analysis Committee” supported by DOE, NRC, and the Electric Power Research Institute, that developed an advanced probabilistic seismic hazard methodology, published in 1997, which has now become the commonly accepted way to do this type of hazard analysis and was used recently in the most advanced studies of the seismic hazards at the Diablo Canyon site; he chaired both the NRC's "Expert Panel on Seismic Margins" that developed the widely-used seismic-margin methodology for assessing the seismic capabilities of existing nuclear facilities, and the DOE’s "Senior External Events Review Group" that advised DOE on seismic and wind design criteria for their proposed new production reactor design; and he chaired the "Committee on Remediation of Buried and Tank Wastes" for several years for the National Research Council/National Academy of Sciences under the Board on Radioactive Waste Management. Dr. Budnitz has also worked extensively in the
fields of nuclear-reactor safety, high-level-waste safety, and nuclear-facility safety assessment, including probabilistic risk assessment.

Dr. Budnitz earned a Ph.D. in physics from Harvard University in 1968, an M.A. in physics from Harvard in 1962, and a B.A. in physics from Yale University in 1961.
Dr. William E. Kastenberg

On December 31, 2007, Dr. Kastenberg retired as the Daniel M. Tellep Distinguished Professor of Engineering, Emeritus, from the University of California, Berkeley. Professor Kastenberg was elected to the National Academy of Engineering in 1997 for his contributions to nuclear reactor safety and risk. He was elected a Fellow of the American Association for the Advancement of Science in 1990 and of the American Nuclear Society in 1978. Kastenberg has won distinguished teaching awards from the American Nuclear Society (Arthur Holly Compton Award in 2000), the American Society for Engineering Education (1973), and the Engineering Graduate Students' Association at UCLA, (1971).

Dr. Kastenberg was appointed as a part-time Administrative Law Judge—Technical on the Atomic Safety and Licensing Board for the U.S. Nuclear Regulatory Commission (2007-present). He has been involved in the adjudication process regarding safety and environmental issues associated with plant license extension for two nuclear power plants, and one proposed new nuclear power plant.

Dr. Kastenberg was appointed by the Governor of California to the Independent Safety Committee for the Diablo Canyon Nuclear Power Plant, and served for 10 years (1990-2000). He was the first appointee and the first chairman of the Committee. During that time, he became intimately knowledgeable regarding all aspects of Diablo Canyon plant design, operations, operator training, licensing and safety. He also instituted many of the Committee’s processes and procedures that are still in effect today.

UC President Atkinson appointed Dr. Kastenberg chairman of the Scientific Panel of the Advisory Group on Low-Level Radioactive Waste, reporting to Governor Davis of California (1999-2000). The panel held public meetings and worked very closely with public interest groups on social and technical issues. Kastenberg was also a founder and the Director of the UC Berkeley, Center for Nuclear and Toxic Waste Management. The Center focused on both institutional and technical issues and included graduate students and faculty from Engineering, Public Policy, Political Science and Energy and Resources at UCB.

Dr. Kastenberg has also been a member of the Advisory Committee on Nuclear Facility Safety, U.S. Department of Energy (DOE, 1988-1991) and served as the Sub-committee Chairman for safety and risk analysis. In this capacity, he was
involved in reviewing the safety of DOE’s research and production reactors, and other nuclear process facilities. He has served on external safety review committees for Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Argonne National Laboratory and Brookhaven National Laboratory. Kastenberg chaired the Peer Review Committee for the Draft Reactor Risk Reference Document, NUREG-1150 (1987-1988). The committee reviewed the results of advancements in risk assessment methodology with application to five U.S. Nuclear Power Plants. Subsequently, the committees’ recommendations were incorporated into the final draft and became the basis for risk informed regulation.

Dr. Kastenberg spent a sabbatical year as a Senior Fellow with the Advisory Committee on Reactor Safeguards, USNRC (1979-1980) working on TMI “Lessons Learned,” and the development of Quantitative Safety Goals. Many of the recommendations based on his work were implemented at a number of nuclear power plants in the United States. He spent a sabbatical year at the Nuclear Research Center in Karlsruhe, Germany, (1972-1973), where he worked on safety issues related to a liquid metal cooled fast breeder reactor (SNR-300).

Dr. Kastenberg has developed and taught graduate courses on reactor safety and risk for over 30 years. He was among the first faculty nationwide to develop academic courses on Fast Reactor Safety (1970s), Light Water Reactor Safety (1980s) and Nuclear Reactor Risk Analysis (1990s). In addition to teaching basic theories of safety and risk, Kastenberg used the PSARs and FSARs of existing nuclear power plants (including Diablo Canyon) as a basis for lectures, homework and term-projects. Former graduate students that have completed their research under his direction have taken leadership positions in academia, government, and industry.

Professor Kastenberg has authored or co-authored over 150 published papers in peer-reviewed journals and conference proceedings related to nuclear reactor safety, nuclear reactor risk assessment, risk management, public health and environmental risk assessment, and multi-stakeholder decision making.
Dr. Michael Quinn

Michael Quinn has invested over 40 years into the public health and safety of the nuclear industry, entailing 25 years in power block operations at a nuclear power station, and during the past 18 years as an executive operations consultant to the nuclear industry in the U.S. and Canada.

Dr. Quinn’s expertise resides in Nuclear Operations; Significant Operational Event Assessments; Nuclear Safety; Nuclear Inspection and Evaluation, and Corrective Action Program/ Human Performance/ Safety Culture assessments.

Throughout his nuclear power career Michael has operated, consulted, and lived to the tenets of Compliance, Integrity, Transparency, and Competency in his nuclear power operation endeavors.

Nuclear Operations Experience within the Power Block

While in the power block of a nuclear unit with a large nuclear utility from 1975 to 1999, Michael earned a U.S. NRC Senior Reactor Operator License on a Westinghouse Pressurized Water Reactor unit, and held leadership positions that included Director of Nuclear Station Services; Nuclear Station Duty Officer; Chair-Nuclear Plant Operations Review Committee [50.59 Reviews]; Corrective Action Review Board (CARB) Chair; Director of Nuclear Station Emergency Operations; Refueling and Maintenance Outage Shift Manager; Manager of Chemistry and Radiochemistry; and Project Manager, reporting to the President, on a three-unit, four-year Nuclear Station Recovery Team.

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 Column 1 and INPO 1 respectively).

Current Nuclear Operations Experience Consulting to Nuclear Regulators, Licensees, and Suppliers

Since 1999 Michael has been engaged by executives in the safe operation of nuclear units, as well as in the new build, refurbishment and decommissioning sectors of the nuclear industry in the U.S. and Canada. On the regulatory side, during the 2006-2019 period he has been contracted to train U.S. NRC resident
inspectors and regional office technical staff on evaluating significant nuclear licensee operational events and processes, with a focus on nuclear safety and the three cross-cutting areas of Human Performance, Problem Identification and Resolution (PI&R), and Safety Culture.

During the past 18-plus years, Michael has been, and is presently: conducting nuclear station and nuclear licensee program and operational assessments of nuclear organizations; leading/performing root cause evaluations on significant nuclear events; and leading recovery project management for nuclear licensees and suppliers. His primary focus is on nuclear safety and the three cross-cutting areas.

In addition, Dr. Quinn continues to assess and to remediate licensee and supplier organizational and corrective action programs; provides PI&R, Human Performance, and Safety Culture consulting, coaching and training; and provides related consulting services to several nuclear industry sectors. These sectors include the commercial nuclear power industry in the U.S. and Canada; U.S. Government (e.g., U.S. NRC, U.S. Department of Energy); and nuclear supplier organizations (large nuclear steam supply system providers (e.g., Westinghouse and Mitsubishi) as well as smaller nuclear suppliers to the new builds in South Carolina and Georgia).

Selected nuclear industry assessments that Dr. Quinn has led or consulted to include:

- Significant safety issues in a high-level, trans-uranic nuclear waste underground facility;
- Consequential design phase issues on the ‘new build’ nuclear project for North Anna 3;
- Significant safety issues on the disassembly and reassembly of components on two CANDU reactors under refurbishment;
- Loss of Offsite Power to the Operations power block of a 1200 MWe nuclear unit;
- Nuclear fuel handling project upgrade failures at five separate nuclear sites involving distinctly different failures during a four-month refueling season;
- A nuclear unit cooling tower failure;
- Five-month reliability assessment of Vermont Yankee Nuclear Station by a large team;
- Collective Significance assessment on six safety systems’ performance challenges at a PWR;
- Collective Significance on Spent Fuel Transfer issues at a decommissioning station;
- Investigating safety-related components that did not meet acceptance criteria at each of the four ‘new build’ nuclear units in SC and GA;
- Significant transuranic (alpha) ingestion/uptake by over 500 craft workers at a nuclear power station;
- Led an assessment to determine factors contributing to ‘engineering rigor’ challenges in a large engineering organization responsible for nuclear wastewater management at a US DOE site.

From a major nuclear industry ‘campaign’ perspective, Dr. Quinn has been/is engaged in many industry issue campaigns and challenges that include/have included:
- Safety culture challenges to nuclear operations;
- Post-accident response and subsequent upgrades (0737);
- Containment sump screen upgrade (GSI-191);
- Groundwater tritium;
- Safeguards at operating and decommissioning nuclear units
- Nuclear fuel handling, storage, cask operations;
- Independent Spent Fuel Storage Installations (ISFSI);
- Radioactive effluents and radioactive waste treatment
- Radiological/transuranic uptakes to over 500 workers;
- Corrective action program challenges, notably 10CFR50 Appendix B Criteria;
- Cumulative Impact/ Nuclear Promise Efficiency Bulletins;
- And very importantly, the impact that a ‘final shutdown decision’ (as Diablo Canyon is facing in 5-6 years) has had on nuclear station staffs’ performance while attempting to maintain focus on operational excellence. Example challenges included maintaining operations ‘within the envelope,’ key staff retention, increase in event frequency and severity, increased employee concerns, and safety culture declines, among others.

Starting in 2006 and continuing into 2019, Dr. Quinn has trained U.S. NRC inspectors and technical staff in a concentrated three-day course to evaluate significant nuclear licensee events and incident reports, training over 600 U.S. NRC inspectors and technical staff during over 40 deliveries. He is contracted through 2022. In 2017, Dr. Quinn was requested to present this training to the
first cohort from the Japan Nuclear Regulation Authority, and in later 2017, he was requested to present the training to the first cohort of the Canadian Nuclear Safety Commission.

Dr. Quinn is the only individual who has taught nuclear event causal analysis evaluation to the US Nuclear Regulatory Commission, the Japan Nuclear Regulation Authority, and the Canadian Nuclear Safety Commission.

Over the past 16 years Dr. Quinn has presented more than 20 workshops and seminars on current nuclear industry issues and challenges at nuclear industry conferences and forums in the US and Canada, as well as for IAEA. He has also taught 23 Management Systems, Strategy, OB/OD, and Management courses at two Connecticut universities.

**LICENSES/ CERTIFICATIONS CONTRIBUTORY TO A POTENTIAL POSITION ON THE DCISC:**

- U.S. NRC Senior Reactor Operator License #10071 on a Westinghouse PWR (Diablo Canyon is a Westinghouse PWR NSSS design)
- Certified Root Cause Investigator (Nuclear Safety Review Concepts Event Evaluation and PII)
- Certified Root Cause Trainer
- Certified Radiation Safety Officer

Michael earned a Doctorate in Organizational Management Systems (organizational system dynamics) and Executive Master of Business Administration degrees from the University of New Haven. He previously earned a Bachelor of Science degree in Chemistry from Charter Oak College.

Michael’s collective past and current nuclear power experience is congruent with the Diablo Canyon Independent Safety Committee’s (DCISC) mission and requirements. He can bring current and comprehensive nuclear operations assessment experience to complement the depth and breadth of the DCISC team.

Beyond his nuclear operations experience and academic background, Dr. Quinn has a demonstrated history of articulating his assessments in an objective, empirically-based, and plain language manner to the full spectrum of stakeholders (e.g., utility commissions, station staff, utility staff, the public, state and federal regulators, interest groups, and the boardroom, among others).
In summary, Michael offers current and comprehensive nuclear industry analysis and assessment experience that support consideration of his candidacy for a role on the Diablo Canyon Independent Safety Committee.

On a non-nuclear note, Michael is a long-time blood donor (since 1973), and presently serves as a member of the Connecticut Community Care Board of Directors, a non-profit health care service provider for over 9,000 individuals in need.

LinkedIn:  [https://www.linkedin.com/in/quinnmd/](https://www.linkedin.com/in/quinnmd/)

END OF APPENDIX A
APPENDIX B

The following are all of the public comments submitted regarding the applicants for the Diablo Canyon Independent Safety Committee. The comments are presented in chronological order and are provided verbatim.
Dear Mr. Zizmor:

I write to recommend Dr. Quinn for a position on Diablo Canyon’s Independent Safety Committee.

Nuclear power, more than others, is a business of managing risk. It is an ongoing battle against overconfidence, declining experience, economics and complacency.

It has been my experience, the most problematic areas are Corrective Actions and compliance to 10CFR50 Appendix B. Here, Dr. Quinn excels; he is the preeminent subject matter expert. He is obviously well qualified.

Even more, the best recommendation I can give Dr. Quinn is his services were recommended to me by his friend and colleague, the late Dr. William Corcoran. An enlightening glimpse of Dr. Corcoran’s perspectives on nuclear power can be found in his 2010 letter to the NRC, commenting on their Revised Draft Safety Culture Policy Statement (ML103010238). Dr. Corcoran’s recommendation speaks volumes of Dr. Quinn’s abilities, character and commitment to nuclear safety.

I understand the importance of your Independent Safety Committee and appreciate the opportunity to comment.

Thank you,
Brian Magnuson
Lead Emergency Preparedness Specialist at Exelon Corporation
Senior Reactor Operator (inactive) and former Operations Shift Manager at Quad Cities Nuclear Power Plant