

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Nuclear Cost Recovery
Clause**

DOCKET NO. 100009-EI
Submitted for filing: April 30, 2010

REDACTED

DIRECT TESTIMONY OF PATRICIA D. GALLOWAY

**ON BEHALF OF
PROGRESS ENERGY FLORIDA**

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IN RE: NUCLEAR COST RECOVERY CLAUSE

BY PROGRESS ENERGY FLORIDA

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DIRECT TESTIMONY OF PATRICIA D. GALLOWAY

1 **I. INTRODUCTION AND QUALIFICATIONS.**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 **A.** My name is Dr. Patricia D. Galloway. My business address is 1750 Emerick Road,
4 Cle Elum, Washington 98922.

5
6 **Q. WHAT IS YOUR OCCUPATION?**

7 **A.** I am the CEO of Pegasus Global Holdings, Inc. ("Pegasus-Global"), a
8 management consulting firm that provides services to the utility industry and other
9 industries.

10

11 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
12 **PROFESSIONAL EXPERIENCE.**

13 **A.** I have a doctorate in Infrastructure Systems (Civil) Engineering from Kochi
14 University of Technology in Kochi, Japan in 2005, a Masters in Business
15 Administration from the New York Institute of Technology in 1984, and a Bachelor
16 of Civil Engineering degree from Purdue University in 1978. I have over 30 years
17 of experience in the industry.

18 I have performed extensive work on behalf of both public and private sector
19 clients, on a wide-range of complex, global engagements involving the

1 construction, engineering, and procurement of large projects with long-lead times.
2 I have an extensive background in engineering, construction, and project
3 management, including controls and scheduling. I have been involved with pre-
4 design, engineering, procurement, construction, and commissioning work for mega
5 and large projects like the development of the Levy Nuclear Plant ("LNP"). This
6 work includes significant experience in bidding and bid solicitation for such
7 projects, procurement, constructability reviews, schedule resource loading and
8 activity evaluation, code and permitting processes, due diligence studies, overhead
9 calculations, quality assurance and control, startup and operations, commissioning,
10 testing and maintenance. I have worked on engineering and construction projects
11 in over 60 countries. My power plant experience includes over 65 power plants.
12 My work experience is described in my curriculum vita, which I have attached as
13 Exhibit No. ___ (PDG-1) to my testimony. My nuclear power plant experience is
14 attached as Exhibit No. ___ (PDG-2) and my non-nuclear power plant experience is
15 attached as Exhibit No. ___ (PDG-3).

16 As a senior Pegasus-Global leader or member on risk management or
17 strategic consulting engagements, I have led management performance and
18 prudence audits, evaluations and assessments of project-specific and corporate risk.
19 These assignments have at times involved testimony in regulatory proceedings.
20 They are identified in Exhibit No. ___ (PDG-4) to my testimony. Other
21 management performance and prudence reviews have not required testimony in
22 regulatory proceedings. These assignments are identified in Exhibit No. ___
23 (PDG-5) to my testimony.

1 I have authored over 100 papers and publications including papers in the
2 area of prudence and utility management. I have also provided or participated in
3 lectures on industry topics including management prudence. These papers,
4 publications, and lectures are identified in Exhibit No. ___ (PDG-1) to my
5 testimony.

6 I have presented expert witness testimony in legal proceedings around the
7 world including numerous commission dockets regarding the prudence of multiple
8 power plants. I have testified approximately 50 times and 16 involved power plant
9 projects. As indicated above, my previous experience testifying in regulatory
10 proceedings involving utility prudence issues is listed in Exhibit No. ___ (PDG-4)
11 to my testimony.

12 I hold a Certificate in Director Education from the National Association for
13 Corporate Directors and have also served on several corporate boards for both
14 private, for-profit corporations and private, non-profit corporations. For example, I
15 am currently a member of the boards for the American Arbitration Association and
16 the National Science Board. My current and past service on corporate boards is
17 included in Exhibit No. ___ (PDG-1).

18
19 **II. PURPOSE AND SUMMARY OF TESTIMONY.**

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 **A.** Progress Energy Florida (“PEF”) asked me to perform an independent review to
22 determine whether PEF made a reasonable and prudent decision to continue with
23 the Levy Nuclear Plant project (“LNP”).
24

1 **Q. DO YOU HAVE ANY EXHIBITS TO YOUR TESTIMONY?**

2 **A.** Yes. I have the following exhibits to my testimony:

- 3 • Exhibit No. ___ (PDG-1), which is my curriculum vitae;
- 4 • Exhibit No. ___ (PDG-2), which is my nuclear power plant experience;
- 5 • Exhibit No. ___ (PDG-3), which is my non-nuclear power plant experience;
- 6 • Exhibit No. ___ (PDG-4), which identifies my prior management prudence reviews
- 7 involving my testimony in regulatory proceedings;
- 8 • Exhibit No. ___ (PDG-5), which identifies my prior management prudence reviews
- 9 that did not involve testimony in a regulatory proceeding.

10 These exhibits are true and correct.

11

12 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

13 **A.** The Company decided to continue the LNP and focus primarily on obtaining the

14 Combined Operating License (“COL”) for the LNP from the Nuclear Regulatory

15 Commission (“NRC”), and other necessary permits and licenses, deferring most

16 other LNP work until the COL is obtained. In my opinion, PEF’s management

17 decision was reasonable and prudent based on the information known and that

18 reasonably should have been known by management at the time the decision was

19 made.

20 PEF made a rational, deliberate decision based on an established process for

21 making management decisions within the Company. The Company used this

22 process to collect the best available information, evaluate that information, identify

23 viable alternatives or options including cancelling the project, and make a decision.

24 This was no rash decision, rather, the Company prudently took steps to update

1 information in light of evolving conditions and circumstances affecting the decision
2 with respect to the LNP. The Company carefully considered the estimated costs
3 and potential benefits, both in the short and long term, to the Company and its
4 customers under each alternative or option. This deliberate process produced a
5 reasonable and prudent management decision with respect to whether and how to
6 proceed with the LNP in light of the conditions and circumstances facing the
7 Company.

8 The Company reasonably and prudently implemented its management
9 decision. The Company employed existing terms and conditions of the EPC
10 Agreement that were included to address situations just like the schedule shift the
11 Company faced on the LNP. These particular terms and conditions were
12 reasonable and prudent under the circumstances and they were reasonably and
13 prudently employed by the Company to preserve the contractual benefits under the
14 EPC Agreement while implementing the Company's decision in an amendment to
15 the agreement.

16
17 **III. LNP PRUDENCE EVALUATION STANDARDS AND METHOD.**

18 **A. PRUDENCE STANDARDS.**

19 **Q. ARE THERE GENERALLY ACCEPTED PRUDENCE STANDARDS FOR**
20 **MANAGEMENT DECISIONS?**

21 **A.** Yes. The definition of a prudent management decision is best articulated as follows:
22 *Decisions are prudent if made in a reasonable manner in light of conditions and*
23 *circumstances which were known or reasonably should have been known when the*
24 *decision was made.* This standard is set forth by the Florida Public Service

1 Commission ("Commission") in its Order No. PSC-09-0783-FOF-EI in the nuclear
2 cost recovery docket last year. This definition is consistent with the prudence
3 standard applied in other regulatory jurisdictions. This prudence definition is also
4 consistent with the prudence standard used in numerous publications on the subject
5 of prudent management decisions. This is the definition that I have used in the
6 prudence reviews that I have conducted. In essence, management makes prudent
7 decisions when management makes an informed decision under the circumstances
8 at the time the decision is made.

9 Prudence, therefore, cannot be judged from a hindsight perspective. Only
10 those circumstances that were known or that should have been known at the time
11 the decision is made can be considered. Management decisions are not made in
12 static conditions. Circumstances change over time and a management decision
13 cannot be deemed imprudent based on unknown changes in the conditions or
14 circumstances at the time the decision was made. Prudence, therefore, recognizes
15 and relies on the concept of foreseeability in two ways: First, an action or lack of
16 action of a utility manager is not unreasonable or imprudent if it involves or is
17 affected by events which were unforeseen and unforeseeable at the time; and
18 second, the cost calculations for any imprudence found properly reflect only the
19 foreseeable consequences of the imprudent decision-making processes or
20 performance.

21 Prudence also involves the evaluation of facts at the time the decision was
22 made. The issue is whether management considered factual circumstances and
23 conditions that management should have considered in making its decision, not
24 whether someone else would make a different decision under the same

1 circumstances and conditions. Management decisions are seldom black and white,
2 rather, more than one decision can prudently be made based on the same
3 circumstances and conditions. The fact that someone else may make a different
4 decision does not mean that management's decision was imprudent. Differences in
5 opinion or judgment do not render a management decision imprudent. There is a
6 zone of reasonableness in which management judgment is exercised and decisions
7 are reasonable and prudent. Prudence is not a test of optimality. Although I found
8 that PEF's decision generally fell within a zone of reasonableness and is therefore
9 prudent, I have drawn no conclusion as to whether another reasonable course of
10 conduct would have resulted in different consequences or costs. It is improper in a
11 prudence review to substitute your judgment for that of management.

12 Prudence, however, is not merely the application of a test that accepts just
13 any rational basis for acceptability of a decision. Rather, the prudence
14 determination requires the evaluation of the concurrent context of the decision, the
15 process for making the decision, and the performance or implementation of that
16 decision by management. This does not mean that prudence is synonymous with
17 efficiency. Prudence does not require that decisions be made and executed in the
18 most efficient manner. It means that there must be some rational, deliberate
19 process that accounted for the circumstances and conditions facing management
20 that was employed by management to make and implement the decision.

21
22 **Q. ARE THESE PRUDENCE STANDARDS CONSISTENT WITH PRIOR**
23 **STANDARDS USED IN FLORIDA?**

1 A. Yes. As I indicated above, the prudence definition that is the foundation for these
2 standards was employed by the Commission in Order No. PSC-09-0783-FOF-EI in
3 this docket last year. The prudence standards were also employed by the
4 Commission in other proceedings. For example, in the 2007 Commission decision
5 in the Compliance Investigation of IXC Registration [PUC LEXIS 561, at *124,
6 *152], the Commission stated: *“Improper hindsight review involves applying facts
7 as we know them today to evaluate decisions made in the past, thereby making a
8 different course of action look preferable. In a proper prudence review, we
9 consider the prudence of decisions made in the past by applying facts that were
10 available to the company at the time of its management decision.”* Thus, the
11 Commission has followed these prudence standards.

12 The prudence standards are also consistent with the nuclear cost recovery
13 statute, Section 366.93, Florida Statutes, and nuclear cost recovery rule, Rule 25-
14 6.0423, F.A.C., which provide for the recovery of all prudently incurred site
15 selection costs, pre-construction costs and the construction carrying costs on
16 construction cost balances on an annual basis. They are also consistent with
17 Section 403.519(4) (e), Florida Statutes, which provides for the recovery of all
18 prudent costs and provides that proceeding with the construction of a nuclear power
19 plant following an order by the Commission approving the need for the nuclear
20 power plant shall not constitute or be evidence of imprudence and that imprudence
21 shall not include any cost increases due to events beyond the utility’s control.

22 These prudence standards are consistent not only with Florida law but they
23 are also consistent with the laws of most other jurisdictions. I reviewed those
24 standards in a number of articles that I published and for presentations that I have

1 made that are identified in Exhibit No. ___ (PDG-1) to my testimony. They are
2 also consistent with the Government Auditing Standards issued by the U.S. General
3 Accounting Office (“GAO”) for prudence audits, especially with respect to capital
4 projects, that I have often used as a guide in my prudence evaluations. (See
5 Government Auditing Standards, United States General Accounting Office, GAO-
6 03-673G, June 2007, Sections 1.25 –1.26, page 17, July 2007, the so-called
7 “Yellow Book” standards).

8
9 **B. PRUDENCE EVALUATION PROCESS.**

10 **Q. HOW DID YOU DETERMINE THAT PEF MADE A REASONABLE AND**
11 **PRUDENT DECISION?**

12 **A.** In conducting my evaluation, I focused on the management processes employed by
13 the Company to make this decision and applied the generally accepted prudence
14 standards to the Company’s decision. This evaluation involved the determination
15 that management followed a rational and deliberate process in making the decision
16 with respect to the LNP. There must be a management structure in place to make
17 such decisions and a process in place to ensure management makes an informed
18 decision. Management makes an informed decision if, at the time the decision is
19 made, management considers the factors management should have reasonably
20 considered based on information that was known or shown have been known at the
21 time the decision was made. An informed decision includes the identification of
22 risks that might arise on the LNP and an appropriate consideration and evaluation
23 of those risks in reaching that decision. Having determined that management made
24 an informed decision I evaluated whether that decision fell within a range of

1 reasonable business judgment. Most if not all management decisions do not
2 involve right or wrong answers, rather, there typically are more than one decision
3 that can be made that are equally reasonable and prudent under the circumstances
4 facing management at the time the decision is made. As long as management's
5 decision falls within this range of reasonable business judgment its decision is a
6 reasonable and prudent one.

7 My evaluation also considered whether management reasonably and
8 prudently implemented the decision it made with respect to the LNP. This
9 evaluation involved (1) an assessment of the applicable terms and conditions of the
10 Engineering, Procurement and Construction Agreement ("EPC Agreement"),
11 executed by PEF and the "Consortium" of Westinghouse Electric Company, LLC
12 and Shaw-Stone & Webster under the business conditions at the time the EPC
13 Agreement was negotiated and in relation to other large capital projects with long-
14 lead times, and current industry practices including risk allocation, and (2) an
15 assessment of the amendment to the EPC Agreement to implement management's
16 decision in March 2010 to continue with the LNP to determine if management
17 reasonably and prudently implemented those terms and conditions.

18
19 **Q. HOW DID YOU EVALUATE THE MANAGEMENT DECISION-MAKING**
20 **PROCESS USED BY THE COMPANY?**

21 **A.** My evaluation of the prudence of the decision-making process and the decision
22 implementation included the following evaluation steps: (1) data development, (2)
23 information flow, (3) analysis, and (4) decision. These steps are described below.

1 Data development addresses what information was available and determines
2 if the management systems and procedures were organized and implemented in a
3 way to produce available information in a reliable manner to management for
4 analysis. It must be remembered, however, that the evaluation of the data
5 development cannot be made with the advantage of 20-20 hindsight. Thus, we
6 judge prudence from the position of utility management and based upon the
7 varying sources of input that they had or reasonably could have had at the time of
8 making a decision. Management never has the time to obtain or luxury of obtaining
9 all information that they desire when making a decision. If management waited
10 until management had all possible information it desired to make a decision,
11 management would never make a decision. The very essence of management is
12 making decisions on less than perfect information.

13 Information flow addresses to whom and when the available data was
14 transmitted and communicated and in what format the information was made
15 available to management. The evaluation of the information flow determines if
16 management timely received the information in an understandable manner to make
17 its decision.

18 The analysis step addresses how the information was evaluated, what
19 alternatives, if any, were identified based on the available information, and what
20 benefits and impacts are projected by management based on the information.

21 Finally, the decision step addresses what decision was made, when the
22 decision was made, how the decision was made, how the decision met project,
23 corporate, and customer needs, and whether the decision was reviewed as
24 assumptions and circumstances changed. This requires management techniques and

1 systems to monitor performance and use that information to continue to improve
2 performance. Nowhere is this truer than in major capital construction projects and
3 especially for capital construction programs, such as, PEF's LNP.
4

5 **Q. HOW DID YOU APPROACH YOUR PRUDENCE REVIEW?**

6 **A.** I used the same qualitative approach to the prudence review for the LNP that I have
7 used for each prudence review that I have conducted. I requested, obtained, and
8 reviewed project documentation sufficient to be reasonably sure that I could derive
9 supportable conclusions from the documentation. This documentation consisted of
10 reports, correspondence, meeting minutes, presentations and other written material
11 and data related to project events, decisions, responses and actions. In addition, I
12 identified and interviewed project personnel, including key PEF project team
13 members and executives charged with direct oversight of the project. These
14 interviews included Jeff Lyash, Executive Vice President; John Elnitsky, Vice
15 President, Nuclear Plant Development ("NPD"); Sue Hardison, General Manager,
16 Corporate Development and Group Business Services; Robert Kitchen, Manager,
17 Nuclear Plant Licensing; Vann Stephenson, Manager, Nuclear Plant Engineering;
18 and Ken Karp, General Manager, Levy Baseload Transmission Projects. The
19 interviews were conducted to establish the basis or underlying explanation for
20 decision making. In my opinion, these interviews are a necessary element of a
21 comprehensive review to provide the rationale or justification for a management
22 decision that cannot otherwise be determined solely from review of documentation.
23 In reaching my conclusions in my prudence evaluation, I looked at the decision-
24 making process and the decisions from the respective levels of management, taking

1 into account each of the documents and interviews and applying the prudence
2 standards.

3
4 **Q. DOCTOR GALLOWAY, WHAT EXPERIENCE DO YOU DRAW UPON TO**
5 **ADDRESS THE PRUDENCE OF MANAGEMENT DECISIONS ON LARGE**
6 **CAPITAL PROJECTS LIKE THE NUCLEAR UNITS IN THIS CASE?**

7 **A.** I have performed extensive work on behalf of both public and private sector clients,
8 on a wide-range of complex, global engagements involving the construction,
9 engineering, and procurement on large projects with long lead times. I have an
10 extensive background in engineering, construction and project management,
11 including controls and scheduling. I have been involved with pre-design work for
12 mega projects like the LNP, including significant experience in bidding and bid
13 solicitation for such projects, procurement, constructability reviews, schedule
14 resource loading and activity evaluation, code and permitting processes, due
15 diligence studies, overhead calculations, quality assurance and control, startup and
16 operations, commissioning, testing and maintenance. I have worked on
17 engineering and construction projects in over 60 countries.

18 I have also presented expert witness testimony on prudence type issues in
19 legal proceedings around the world and I have been a member of prudence audit
20 teams for large power plant projects, including nuclear power plants. I am currently
21 assisting in prudence audits in Kansas and Missouri on the Iatan 1 and 2 coal
22 generating units which have a combined project cost of \$3 billion.

23 In addition, I have Board of Director experience and I have been involved in
24 the Board decision-making process on those Boards which I serve as a director.

1 Finally, I am also a senior member on risk management engagements, and I have
2 undertaken and led audits, evaluations, and assessments of project-specific and
3 corporate risk. For instance, I am currently serving on an Independent Review
4 Panel for the Governors of Washington and Oregon on the multi-billion dollar
5 Columbia River Crossing project. This experience is described in more detail in my
6 curriculum vitae attached as Exhibit No. __ (PDG-1) to my testimony.

7
8 **Q. WHAT DO YOU MEAN BY THE TERM “MEGA PROJECT”?**

9 **A.** “Mega projects” are defined as very large capital investment projects that attract a
10 high level of public attention or political interest because of substantial direct and
11 indirect impacts on the community, environment, and companies that undertake
12 such projects. They are generally defined as major projects that cost more than
13 \$1 billion (US). I have worked across the world on mega projects costing several
14 billion dollars (US). A recent example is the \$20 billion CrossRail project in
15 London where I am working for Her Majesty’s Treasury regarding risk
16 management. PEF’s construction of the LNP is a mega project under this definition.

17
18
19 **IV. THE COMPANY’S MANAGEMENT DECISION WITH RESPECT TO THE**
20 **LEVY NUCLEAR POWER PLANT PROJECT WAS REASONABLE AND**
21 **PRUDENT UNDER THE CIRCUMSTANCES.**

22 **Q. WHAT DECISION DID PEF MANAGEMENT MAKE WITH RESPECT TO**
23 **THE LNP?**

1 A. The Company decided to continue the LNP and focus primarily on obtaining the
2 COL for the LNP from the NRC, and other necessary permits and licenses,
3 deferring most other LNP work until the COL is obtained. This decision was made
4 in response to the schedule shift the Company faced as a result of licensing delays
5 beyond the Company's control and additional circumstances affecting the project
6 risks. As a result, the Company addressed the options available to the Company.
7 These options included (1) terminating the EPC Agreement and cancelling the
8 project, (2) proceeding fully with the project on the shortest possible schedule, and
9 (3) amending the EPC Agreement to suspend most work and capital investment in
10 the project until the COL is obtained and focusing near term efforts on obtaining
11 the COL. The Company engaged in a deliberate evaluation of each option to
12 determine the option that was in the best interests of the Company and its
13 customers considering the costs, short- and long-term benefits, and risks associated
14 with each option. The Company concluded that amending the EPC Agreement to
15 focus near-term LNP work on obtaining the COL with most work deferred until the
16 COL was obtained was the option that was in the best interests of the Company and
17 its customers.

18
19 **Q. WAS THAT A REASONABLE AND PRUDENT MANAGEMENT**
20 **DECISION?**

21 A. Yes. PEF's decision to partially suspend the LNP until receipt of the COL for the
22 project from the NRC was both reasonable and prudent based on the information
23 known and that reasonably should have been known at the time the decision was
24 made. This was a rational, deliberate decision based on an established, known

1 process for making management decisions within the Company. The Company
2 employed its existing management framework and decision-making processes to
3 collect relevant information, evaluate that information, and make a decision. The
4 Company did not make a rash decision before all facts and circumstances that
5 might affect the decision were considered. The Company did not side step its
6 decision-making framework and processes to make this decision. The rational,
7 deliberate process the Company employed to make its decision with respect to the
8 questions whether and how to proceed with the LNP produced a reasonable and
9 prudent management decision. Further, the Company reasonably and prudently
10 implemented that management decision under the existing terms and conditions of
11 the EPC Agreement that were included to address situations like the schedule shift
12 the Company faced on the LNP. These particular terms and conditions were
13 reasonable and prudent under the circumstances and they were reasonably and
14 prudently employed by the Company to preserve the contractual benefits the
15 Company had in place under the EPC Agreement in an amendment to the
16 agreement.

17
18 **Q. DID YOU CONSIDER THE CIRCUMSTANCES IN WHICH THIS**
19 **DECISION WAS MADE?**

20 **A.** Yes. Consideration must be given to the particular point in the execution period.
21 For example, PEF was delayed from their 2008 plans by the NRC decision to
22 review the Limited Work Authorization ("LWA") application over the same time
23 period as the Combined Operating License Application ("COLA"). Once the
24 various schedule shift scenarios were received from the Consortium in August 2009,

1 PEF found it was faced with a considerably different construction market. I point
2 this out because circumstances and conditions seldom remain static over the
3 extended durations of major capital construction. When judging the prudence of
4 decision making, we place decision making in the factual context of what could
5 reasonably be known at the time. Once the decision is made, there also must be
6 recognition of the time to implement or respond to the decision, during which
7 circumstances and conditions are not static. From the end of 2008 to today the
8 shifting issues and resulting circumstances have gone through many changes. For
9 that reason we place the decision making process into time context or continuum
10 that existed at the time the decision was made.

11
12 **Q. DID THE COMPANY HAVE A MANAGEMENT STRUCTURE IN PLACE**
13 **FOR A RATIONAL AND DELIBERATE PROCESS WITH RESPECT TO**
14 **THE DECISION TO PROCEED WITH LNP?**

15 **A.** Yes. Progress Energy and Progress Energy Florida assure a deliberate and rational
16 decision-making process through a management committee structure flowing from
17 the detailed project level up to the Board of Directors. The process is outlined in
18 the Levy Governance Policy MGT-NPDF-00001 developed for the LNP in June
19 2009 and updated in December 2009. Briefly, the oversight and discussion of
20 project issues, including impact to LNP cost and schedule, are first performed by
21 the Program Management Team ("PMT") whose role and responsibility is to serve
22 as a means to review and manage ongoing program and project activity for
23 development of the LNP and associated transmission. The PMT is chaired by John
24 Elnitsky, Vice President of NPD. Its membership includes direct department

1 leadership and key stakeholders who provide functional support to the program
2 including licensing, engineering, project management, project controls, legal and
3 external relations. The PMT is structured within the project management culture of
4 NPD and aligns with other program management and project reviews established to
5 support project activities, status and oversight. PMT meetings occur weekly as
6 needed.

7 John Elnitsky also sits on the then Levy Integrated Nuclear Committee
8 (“LINC”) and now the Project Performance Review (“PPR”) committee whose
9 purpose is to provide periodic program performance and project status to the
10 Executive Sponsor and the Senior Management Committee (“SMC”). The PPR
11 reviews and discusses the issues as presented by the PMT relative to LNP and
12 makes recommendations for management action and decisions to the SMC. The
13 SMC consists of Senior and Executive Vice Presidents of Progress Energy. As with
14 all major projects, the SMC is engaged in oversight, funding authorizations and
15 ongoing performance reviews of the LNP. The SMC is informed of project status
16 monthly using standard company reporting templates, thus ensuring consistency of
17 information to be reviewed and used in the decision making process. The SMC is
18 briefed prior to Board Meetings relative to LNP to allow for discussion of status
19 and proposed actions to in turn provide the Board of Directors with data and
20 information to allow the Board to make informed decisions.

21 Jeff Lyash is both a member of the PPR and the SMC. Jeff Lyash is then
22 responsible for identifying those issues, actions and recommendations relative to
23 the LNP for discussion and decisions to the Board Committee for Operations and
24 Nuclear Oversight and the Board of Directors for PEF and Progress Energy, Inc.

1 The Board of Directors is the highest governing authority within the management
2 structures and is charged with the overall responsibility for the Company. The role
3 of the Board is to establish policy which the Company will follow, to oversee how
4 management serves the long term interests of the shareholders and other
5 stakeholders within the framework established by applicable legal and regulatory
6 systems and to make major business decisions such as (1) establishing and
7 amending bylaws, (2) issuing dividends, (3) approving major contracts or mergers,
8 (4) making key decisions regarding assets owned or managed by the Company and
9 (5) electing or appointing officers. The Board does not handle day to day activities
10 of the Company and leaves that to the officers of the Company. Board members
11 are required to act in a prudent manner on behalf of the Company's best interests.
12 All Board activities are documented to show that the Company's business was
13 conducted reasonably. Jeff Lyash attends each Board meeting with Bill Johnson,
14 the Chief Executive Officer and a member of the SMC, and is responsible to the
15 Board of Directors for the LNP information presented to and considered by the
16 Board of Directors. Jeff Lyash and Bill Johnson make presentations to the Board
17 Committee and the full Board of Directors regarding LNP status and information
18 for Board consideration in its decision-making process.

19 The Board Committee for Operations and Nuclear Oversight is comprised
20 of experienced individuals in the nuclear area. These individuals include Charles
21 W. Pryor, Jr., Chairman of Urenco Investments, Inc, a global provider of value
22 added services and technology to the nuclear generation industry. Mr. Pryor was
23 previously with Westinghouse. They also include Alfred C. Tollison, Jr., retired
24 Chairman and Chief Executive Officer of the Institute of Nuclear Power Operations,

1 an industry sponsored nonprofit organization. This Committee has the experience
2 and expertise to raise questions and deliberate on the issues presented to them with
3 respect to nuclear generation projects like the LNP. Although the Board Operations
4 and Nuclear Oversight Committee is not a recommending committee to the Board
5 of Directors, Committee members are members of the full Board and attend the full
6 Board meetings where they provide insight and information relative to specific
7 issues involving LNP.

8 This management organization provided the necessary structure for a
9 rational, deliberate process to make a decision with respect to the LNP. It was well
10 defined and known within the organization at the outset of the project. Roles were
11 well defined and known to ensure that available information was provided to
12 support the recommendations for management decisions at each level of the
13 organization. The overlap of senior management personnel throughout the
14 management committee organization of the parent and subsidiary company also
15 provided the structure to ensure that the decision makers at each step in the process
16 were fully informed to make a decision. This was an appropriate management
17 structure for a reasonable and prudent decision making process.

18
19 **Q. DID THIS MANAGEMENT STRUCTURE DEVELOP AVAILABLE**
20 **INFORMATION AND ENSURE THAT IT WAS PROVIDED TO**
21 **MANAGEMENT TO MAKE AN INFORMED DECISION?**

22 **A.** Yes. The documentation I reviewed, which was provided by and to the various
23 committees I have just described, was complete and conveyed information that was
24 known and should have been known at the time decisions were made both

1 internally and externally with regards to the nuclear industry and the LNP in
2 particular.

3 When PEF learned that an LWA would not be issued on the schedule that
4 was contemplated under the EPC Agreement with the Consortium, PEF requested
5 the Consortium to evaluate various scenarios of shifting the schedule and the
6 impact these various schedule shift scenarios would have on the overall cost of the
7 LNP going forward. The results of the scenario analyses were one factor that was
8 necessary to PEF's decision concerning the schedule shift for the LNP Commercial
9 Operation Date and a foundation for negotiating an amendment to the EPC
10 Agreement. The LNP is a complex project with an intricate EPC Agreement
11 between PEF and the Consortium that involves multiple sub vendor and equipment
12 supplier arrangements between the Consortium and its suppliers. Any amendment
13 to the EPC contract thus required input from these subcontractors to the
14 Consortium regarding how various schedule shift considerations might affect PEF's
15 place in the manufacturing process and/or potential cancellation costs. PEF simply
16 could not just pick a date without consideration of the impacts from multiple
17 scenarios unless it had the input from the Consortium (and the Consortium's
18 subcontractor vendors) on these scenarios. In conducting the scenario analysis,
19 PEF outlined key criteria to be evaluated including cost certainty, schedule
20 certainty, cash flow requirements and restrictions, availability for
21 manufacturing/capacity/storage, engineering and craft labor continuity and
22 availability, among others. The Company considered the Consortium input in
23 addition to other considerations addressing circumstances that affect both the
24 Company and the customer, reducing near-term capital commitments, and

1 preserving long-lead items. These considerations were part of the decision making
2 process which also considered the potential for unanticipated COL delay and the
3 suspension provisions under the EPC Agreement.

4 This was a rational, deliberate and thorough approach to making a
5 reasonable and prudent decision with respect to addressing the LNP schedule shift.
6 Once the NRC LWA determination was confirmed, PEF put the Consortium on
7 notice of the likely schedule shift and to begin reducing expenditures for the
8 remainder of 2009. PEF turned to the terms and conditions of the EPC Agreement
9 relative to its options to suspend the work, its payment obligations, protection of
10 the work, and resumption of the work. During the period from notice of partial
11 suspension until the March 2010 decision to amend the EPC Agreement, data and
12 information continued to be gathered, evaluated and flowed up and down the
13 organization through the PMT, PPR, SMC and Board with options modified and
14 refined as information became known and as conditions and circumstances changed
15 during this time. The Company continued to monitor and evaluate its options
16 considering customer price impacts under adverse economic conditions, the capital
17 market deterioration, financial risk mitigation during the on-going recession, and
18 the uncertain political and regulatory climate. The Company continued to review
19 and preserve all options in the manner I have described while at the same time
20 instituting the governing policies and procedures for LNP, transitioning from the
21 LINC to the PPR, holding discussions with the Consortium regarding suppliers for
22 major equipment and components regarding the schedule shift and reviewing
23 external industry nuclear developments. Based on input from the Board and the
24 SMC, the PPR continued to evaluate the information and negotiate an amendment

1 to the EPC Agreement with the Consortium resulting in draft principles under
2 which the amendment would be prepared.

3 This process resulted in a reasonable and deliberate process for developing
4 the information necessary for management to make an informed decision relative to
5 the schedule shift under the terms and conditions of the EPC contract with the
6 Consortium and the evolving conditions and circumstances facing the Company
7 with respect to this decision.

8
9 **Q. DID MANAGEMENT CONSIDER THE FACTORS THAT THEY SHOULD**
10 **HAVE REASONABLY CONSIDERED BASED ON INFORMATION THAT**
11 **WAS KNOWN OR SHOULD HAVE BEEN KNOWN AT THE TIME OF**
12 **THE DECISION?**

13 **A.** Yes. PEF first considered factors that affected the project schedule and pricing,
14 such as, material, long-lead equipment, and labor. This was based on information
15 that was developed by the project teams and PMT after analysis of the schedule
16 shift scenario results provided by the Consortium. The results of this analysis were
17 included in the recommendations to SMC along with information developed from
18 other sources, including the on-going impacts of federal and state regulatory
19 licensing activities and the review of enterprise risks by the Company. Enterprise
20 risks were risks that were beyond the control of the Company that had an impact on
21 the Company and the LNP, such as the economy, capital market conditions, and
22 state and federal regulatory and legislative policies. All of this information was
23 appropriately developed by the project team and included with the
24 recommendations to SMC and the Boards.

1 PEF further considered the benefits obtained upon EPC execution in the
 2 EPC Agreement and the long term benefits of nuclear generation to the Company
 3 and its customers during this decision-making process. The EPC Agreement
 4 benefits included: [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED] PEF considered all these factors in its decision-
 9 making process regarding the terms and conditions of the EPC contract, including
 10 how to best structure the terms and conditions in any amendment to the EPC
 11 Agreement in order to maintain the most flexibility for the LNP.

12 In addition, as part of its decision-making process, the Company assured
 13 that it had information and was informed of current and best industry practice in the
 14 nuclear industry through senior executive management, such as Jeff Lyash and
 15 John Elnitsky, in nuclear industry associations including the Nuclear Plant
 16 Oversight Committee, the INPO New Plant Executive Group and the AP1000
 17 Builders Group, to name a few; and through its Board members as I have
 18 previously discussed.

19 The deliberations leading up to management's March 2010 decision
 20 indicate that this information was included in management's deliberations as
 21 management considered (i) maintaining the LNP as a viable option for the long-
 22 term benefits of nuclear generation in Florida; (ii) managing the financial impact to
 23 customers and providing near-term customer price relief; (iii) shifting capital
 24 expenditures beyond the COL and reducing near-term Company capital

1 expenditures; (iv) providing transmission flexibility; (v) allowing time for more
2 certainty in federal and state electric industry policy; and (vi) allowing time for the
3 settling of and improvement in the economy and financial markets.

4 The information developed at the project team level and flowed to
5 management with respect to the decision PEF faced regarding how to address the
6 shift in the schedule demonstrates that management had available information to
7 make a decision, that this information was appropriately updated as management
8 deliberated on what decision to make, and that management's decision included
9 information on factors known to management at the time and that should have been
10 known or considered at the time the decision was made.

11
12 **Q. DID MANAGEMENT IDENTIFY RISKS THAT MIGHT ARISE ON THE**
13 **LNP AND APPROPRIATELY CONSIDER THOSE RISKS IN ITS**
14 **DECISION?**

15 **A.** Yes. Risks were identified by management as part of PEF's risk management
16 practices and policies, including risk mitigation strategies developed for the risks
17 identified. Risks must be identified and appropriate protections established to
18 prevent or control them. Prudent decision-making results from orderly, well-
19 defined processes that address known risks, needs and capabilities. Adherence to
20 written procedures, effective communication, internal and contractor oversight, and
21 ongoing auditing and quality assurance are essential to ensure that project costs are
22 incurred prudently.

23 My review of the PEF policies and procedures indicates that PEF did have
24 in place policies and procedures that addressed how risk would be identified,

1 monitored, and handled. PEF follows a formal Corporate Project Risk Management
2 program adopted in March 2009 (PJM-SUBS-0008), which provides structured
3 guidance on project risk management. PEF identified both project risk and
4 contextual risk in its decision-making process. In addition to project risks, other
5 enterprise risks were considered that could potentially impact the LNP, as I noted
6 above, including impacts of the economy on the capital markets, financing,
7 regulatory and legislative uncertainty, and other factors that have the potential to
8 materially alter the LNP schedule and cost. PEF continued to evaluate the risks
9 identified and which arose from the decision to shift the schedule at the time of the
10 LWA decision and through its March 2010 decision to defer certain work until
11 COL receipt.

12 The risks identified by PEF are risks inherent in a long-term base load
13 project like LNP. While these risks cannot be eliminated, PEF has a structure which
14 allows the identified risks to be monitored and managed with appropriate
15 responsive risk mitigation strategies. It would be unreasonable to expect a utility to
16 eliminate these risks or obtain certainty with respect to these risks for a nuclear
17 power plant project.

18
19 **Q. WAS MANAGEMENT'S DECISION WITHIN A RANGE OF**
20 **REASONABLE BUSINESS JUDGMENT?**

21 **A.** Yes, it was. In applying the prudence standards we must remember that decision
22 making is not an absolute science. It involves using human judgment to identify
23 and select a course of action based on a set of identified conditions. It is entirely
24 possible for two individuals faced with the same set of conditions to make different,

1 reasonable decisions; that is where human judgment comes into play. Therefore,
2 the question of prudence is not whether the decision is viewed as a right or wrong
3 decision today, but whether the decision was an informed one based on a rational,
4 deliberate process. That means relevant information was collected, interpreted, and
5 analyzed by management in reaching management's decision, and the decision
6 ultimately selected reflects the analysis of that information under contextual
7 conditions of the project at the time of the decision. If that is the case, the
8 management decision is within the range of reasonable business judgment even if
9 another experienced individual or company might reach the same or a different
10 decision based on the same information and contextual conditions at that time.

11 Against this backdrop, my examination of the PEF decision making
12 processes, the information and data that was actually collected, interpreted and
13 analyzed prior to development of alternative responses, and the ultimate decisions
14 made by PEF, reveal that PEF followed a rationale and deliberate process prior to
15 identifying alternative responses to the events and issues which arose and existed in
16 2009 and 2010 concerning the LNP. My examination further determined that PEF
17 identified and evaluated the risks which existed as a result of the current project
18 conditions and the changes to the project risk profile which would accompany the
19 various alternative actions under consideration. Based on my examinations, I
20 concluded that the decision made by PEF was reasonable and prudent.

21
22 **Q. PLEASE EXPLAIN THE REASONS FOR YOUR CONCLUSION.**

23 **A.** To begin with, events and issues which arose after the decision to proceed with the
24 LNP and the execution of the EPC Agreement in 2009 had a significant impact on

1 the planned project schedule, which in turn resulted in a shift in the project's risk
2 profile. In summary, the decision by the NRC to withhold action on the LWA prior
3 to issuance of the COL meant that PEF would gain no construction progress against
4 the project schedule prior to receipt of the COL from the NRC. Further, the
5 regulatory situation relative to the certification of the AP1000 and the general
6 uncertainty with respect to the licensing schedules being set by the NRC appeared
7 to have the potential to further delay licensing actions by the NRC within the
8 schedules set by the NRC and PEF. This meant that the expenditure of funds prior
9 to the receipt of the COL would have no direct benefit or limited benefit to either
10 PEF or its customers.

11 Given the change in the project risk profile, PEF was faced with three
12 options: (1) continue the project at "full speed" as originally planned; (2) cancel the
13 project entirely; or (3) continue the project under partial suspension, adjusting the
14 project execution plan to reduce the near term capital investment cost impact on
15 PEF and its customers. One of the primary considerations in all three options
16 involved the EPC Agreement. Other considerations were the information developed
17 by the project management team and provided to management regarding the NRC
18 licensing schedule issues, project cost impacts of each option, and potential project
19 and enterprise risk impacts.

20 Under Option 1, full speed continuation under the most aggressive, revised
21 project schedule, the expenditure rate under the EPC Agreement would continue at
22 a rate which simply was not acceptable to PEF, even though that work would have
23 ultimately been required to execute the project. PEF reached this conclusion based
24 on an evaluation of the information before management, including the near-term

1 customer bill impacts during an on-going recession, capital market conditions, and
2 the exposure of significant capital invested in the project prior to obtaining the
3 COL given the project and enterprise risks.

4 Under Option 2, the first impact under the EPC Agreement would be a

5 [REDACTED]

6 [REDACTED] In addition, all of the benefits and advantages gained in executing the EPC
7 Agreement early would be lost should PEF later decide to reinstate the project and,
8 as a result, have to renegotiate the EPC Agreement. The Company further
9 considered the likely loss of the long-term benefits of nuclear generation in the
10 event of project cancellation given the likely focus of industry and regulatory
11 resources on active nuclear development projects.

12 Under Option 3, assuming that the EPC Agreement terms and conditions
13 could be amended to preserve the primary benefits and advantages while at the
14 same time extending the project schedule and reducing near term expenditures,
15 PEF could maintain the maximum number of options in response to issues and
16 events which might occur prior to the NRC issuance of the COL. Ultimately the
17 decision rested on whether or not PEF could amend the EPC Agreement to (1)
18 preserve the maximum benefits already negotiated into that contract, and (2) enable
19 PEF to significantly reduce the near term expenditures on the project.

20
21 **Q. HOW WERE THESE OPTIONS EVALUATED AND CONSIDERED BY**
22 **PEF?**

23 **A.** Each of those options was developed and presented to PEF Senior Management in
24 a series of meetings held between October 15, 2009 and March 8, 2010. In a SMC

1 meeting held on February 15, 2010, full discussions relative to the pros and cons of
2 each of the three viable options were discussed. It was noted during that meeting
3 that NRC issuance of the COL would occur, at the earliest, in the 4th quarter of
4 2012. Based on that date, PEF identified the ability to meet an in-service date of
5 2019 as “optimistic” at best. PEF further noted that given the schedule impacts,
6 Option 1 had the highest near term expenditure impact on PEF customers and the
7 highest cash flow impact on PEF, while providing the least protection against
8 future risk impacts which may manifest while awaiting NRC COL approval. In
9 short, doing nothing did not appear to be a reasonable option or provide substantial
10 benefit to the Company and its customers.

11 During that February 2010 meeting it was reaffirmed that nuclear
12 generation remained a vital and viable baseload generation choice which should
13 remain part of PEF’s long term planning. Given that affirmation, while Option 2,
14 cancellation of the project, might address the near term cost impact of simply
15 continuing the project at full speed, that option had the potential to seriously impact
16 PEF’s ability to bring nuclear power generation on line in the foreseeable future.
17 However, if the EPC Agreement could not be amended in such a way to preserve
18 the maximum benefit while significantly reducing near term costs, Option 2 was
19 preferred over Option 1.

20 Option 3 was the preferred and recommended option put forward by PEF
21 Management. This option, in management’s judgment, was in the best interests of
22 the Company and its customers considering the risks and impacts associated with
23 the near term investment of significant capital in the project weighed against the
24 benefits of the LNP to the Company and its customers. However, that option was

1 based upon PEF successfully negotiating an amendment of the EPC Agreement
2 which extended the project schedule, reduced near term cost, and preserved the
3 maximum benefits contained in the EPC Agreement.

4 The Company reasonably pursued the potential for such an amendment with
5 the Consortium before making a final decision. The basic principles for such an
6 amendment were discussed with the Consortium during several meetings in late
7 2009 and memorialized in a letter dated January 8, 2010, within which PEF laid out
8 the conditions under which it would be willing to amend the current EPC
9 Agreement. Chief among those principles was that [REDACTED]

10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]

14 At a meeting held on March 8, 2010, SMC was briefed on the status of
15 negotiations with the Consortium, noting that [REDACTED]
16 [REDACTED]
17 [REDACTED] The advantages of the
18 negotiated amendment were minimization of near-term costs and customer impact,
19 reduction in the cost uncertainty at the resumption of the full project, maintenance
20 of the benefits gained in the original EPC, including the [REDACTED]

21 [REDACTED]
22 [REDACTED]

23 SMC approved Option 3 on this basis and this recommendation was presented to
24 the Board.

1 **Q. WHAT WAS THE PROCESS USED BY THE BOARD IN ITS DECISION**
2 **MAKING PROCESS REGARDING THESE OPTIONS?**

3 **A.** The Board approved SMC's recommendation at a March 2010 Board meeting. The
4 Board's decision to partially suspend the LNP until receipt of the COL was based
5 on consideration of the information before the SMC that was presented to it
6 regarding the options before the Company, the pros and cons of each option, and
7 the recommended option and basis for the recommendation. The Board considered
8 all these factors in conjunction with the terms and conditions of the EPC
9 Agreement and the fundamental reasons for selecting the LNP as a part of Progress
10 Energy's Balanced Solution long term energy strategy. These reasons were
11 recognized by the Commission in the approval of the need for the LNP and
12 included fuel portfolio diversity, reduction of PEF's reliance on fossil fuels for
13 energy production, carbon free energy generation, and the provision of unparalleled
14 base load capacity with a relatively lost cost fuel source for PEF and its customers.

15
16 **Q. WAS THIS A REASONABLE AND PRUDENT PROCESS?**

17 **A.** Yes. As this summary shows, PEF obtained, evaluated, and analyzed relevant
18 information regarding the decision it had to make with respect to the schedule shift,
19 including timing and cost information from the Consortium and its vendors, and
20 information regarding the risks that arose during 2009, including certain enterprise
21 risks such as the national economy, reduced load growth in Florida, continued
22 uncertainty with respect to federal climate change policy, PEF credit ratings, DCD
23 delays, and ASLB contentions. This process of gathering, evaluating, and analyzing
24 the information took considerable time given the nature and complexity of this

1 project. This is not, however, unusual for megaprojects like the LNP. The decision
2 whether and how to proceed with the LNP is a complex one and prudence requires
3 that the necessary time be invested in gathering and analyzing the relevant
4 information to make such an important decision with respect to the LNP.

5 Further, during the course of obtaining, evaluating, and analyzing the
6 relevant information, and based on the risks identified, the Company identified
7 potential, alternative decisions that included cancelling the project. Management,
8 therefore, was not predisposed to continuing the project or to any particular LNP
9 option. Rather, management reasonably weighed the pros and cons of each option
10 before deciding on an option, and even then, management considered whether there
11 were any necessary conditions to proceeding with that option. Having identified
12 such conditions, management reasonably did not proceed with this option until the
13 Company was assured those conditions were met. This was an informed decision
14 based on a rational, deliberate decision-making process by Company management
15 and, therefore, in my opinion, the decision is a reasonable and prudent decision
16 within the range of reasonable business judgment.

17
18 **Q. DID MANAGEMENT REASONABLY AND PRUDENTLY IMPLEMENT**
19 **ITS DECISION IN MARCH 2010 TO CONTINUE WITH THE LNP?**

20 **A.** Yes. PEF management specifically took advantage of the suspension and
21 termination clauses that were reasonably and prudently obtained when the EPC
22 Agreement was originally executed to negotiate a favorable amendment to that
23 EPC Agreement identified as Amendment 3 to the agreement.

1 Leading up to the March 2010 Board meeting and its decision to execute
2 Amendment 3 to the EPC Agreement, PEF senior management spent months
3 negotiating the proposed amendment to the EPC Agreement. As noted above, PEF
4 management and the Board of Directors considered both termination and
5 suspension of the contract including the benefits and risks associated with each
6 decision. During the negotiations of Amendment 3, PEF was able to [REDACTED]
7 [REDACTED] of the EPC Agreement. [REDACTED]

8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED] Amendment 3 to the EPC

13 Agreement achieved all of these Company objectives.

14
15 **Q. HOW DID AMENDMENT 3 ACHIEVE THE COMPANY'S OBJECTIVES?**

16 A. Amendment 3 allows for the amendment of certain provisions of the EPC
17 Agreement while the remaining provisions remain intact. There are significant
18 elements of Amendment 3 that provide minimal cost to PEF and its customers
19 while at the same time preserving the nuclear option and the terms and conditions
20 of the EPC Agreement. These are:

21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]

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However, this provision provides the Company sufficient time to evaluate the project and decide how to proceed after the COL is issued [REDACTED]

[REDACTED]

[REDACTED] Amendment 3 successfully mitigates project and enterprise risk prior to receipt of the LNP COL by shifting substantial capital investment in the project until after the COL is obtained. [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The terms and conditions of the EPC Agreement provide the framework under which PEF was able to execute its decision and has resulted in benefits to the Company, its shareholders, the customers, and the State of Florida. The benefits of this decision include: (1) slowing down spending on LNP until after the COL is issued; (2) preserving the long term value of the project and COLA while reducing near-term price impacts to customers; (3) providing time for lessons learned to be obtained from the completion of other AP1000 nuclear plants including China's Sanmen Unit 1 and Georgia Power's Vogtle Unit 3; (4) providing the ability to monitor any changes and uncertainties in the licensing schedule; (5) allowing

1 additional time for the current economic recession to subside; (6) providing greater
2 certainty surrounding carbon regulation and its costs; (7) providing more time to
3 see how demand-side management goals affects customer price; and (8) allowing
4 PEF the benefit of alternative technologies that may be available at the time.

5 As a result, I have evaluated the decision-making process and the decision
6 to implement the partial suspension of the LNP and conclude that both the process
7 and decision are what I would have expected to see and are reasonable and prudent
8 under the prudence standard I have employed.

9
10 **Q. WHAT WERE THE FAVORABLE TERMS AND CONDITIONS OF THE**
11 **EPC AGREEMENT THAT YOU CLAIM WERE PRESERVED UNDER**
12 **AMENDMENT 3 TO THE EPC AGREEMENT?**

13 **A.** There are several EPC Agreement provisions that are favorable to PEF. These
14 include [REDACTED]

15 They also include the following:

- 16 [REDACTED]
- 17 [REDACTED]
- 18 [REDACTED]
- 19 [REDACTED]
- 20 [REDACTED]
- 21 [REDACTED]
- 22 [REDACTED]
- 23 [REDACTED]
- 24 [REDACTED]

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[Redacted content]

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[REDACTED]

The terms and conditions of the EPC Agreement align the penalties and incentives and the appropriate amount of fee at risk so that all parties are driven by the same goals of cost and schedule control. PEF maintains control through various clauses including favorable termination and suspension clauses which have proven to preserve the benefit of the EPC Agreement while at the same time being able to suspend the work as the direct result of unforeseeable delay or circumstances.

1 The suspension clause in fact worked just as it was intended by providing
2 PEF with a contractual mechanism to handle the schedule shift on the LNP when it
3 occurred. PEF had the right to suspend all or part of the work [REDACTED]

4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]

10 In my opinion, the EPC Agreement terms and conditions that PEF
11 preserved with Amendment 3 to the EPC Agreement are beneficial to PEF and its
12 customers. PEF senior management and the Board worked hard to get the
13 favorable terms and conditions of the EPC Agreement and took reasonable and
14 prudent steps to preserve these favorable terms and conditions.

15 To illustrate this further, let's look at [REDACTED] under the
16 EPC Agreement. These provisions require the [REDACTED]

17 [REDACTED]
18 [REDACTED]
19 [REDACTED]

20 A major component of the risk of constructing a nuclear
21 power plant in the U.S in the past has been the acceptance and issuance of an
22 Operating License for the final plant. This risk is partially mitigated with the
23 application of the COL, which combines approval of the construction license with
24 that of the operating license. However, it is still an NRC requirement that the
licensee demonstrate through ITAAC that the plant has been designed and

1 constructed in compliance with the certified design. Westinghouse has developed
2 the standard plant based on the AP 1000 which has been certified by the NRC.
3 Through this involvement with the Design Certification by the NRC, the
4 Consortium is in the best position to influence the NRC's development of the
5 ITAAC requirements. Under the EPC Agreement, [REDACTED]

6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]

11 This area is one where the [REDACTED]
12 [REDACTED] When
13 supplemented by using a standard design and criteria that will be defined in
14 advance by the NRC when they issue the ITAACs, there is enhanced project
15 definition. The lack of complete definition has historically been a prime source of
16 claims between the Owner and EPC Consortiums. Based on my experience in the
17 industry and best industry practices, as this one example illustrates, I believe that
18 the terms and conditions are reasonable and prudent in relation to other large
19 capital projects with long-lead times and they are consistent with current best
20 practices in the industry with respect to project risk allocation, including the risk of
21 unforeseen schedule shifts that PEF experienced on the LNP.

22
23 **Q. IS IT BENEFICIAL FOR PEF TO HAVE THE LNP EPC AGREEMENT**
24 **GIVEN THE ENVIRONMENT FOR NEW NUCLEAR GENERATION?**

1 A. Yes. The EPC Agreement provides the flexibility in contracting approaches that is
 2 needed to address cost, timing and schedule uncertainties, and appropriately
 3 allocate risk with respect to megaprojects, especially nuclear generation
 4 megaprojects. Based on industry practice, and the nature of the issues that will be
 5 experienced during construction of the LNP, some form of an EPC-type contract
 6 with a firm/fixed price structure is the most preferable contracting methodology.
 7 Clearly, LNP is a “megaproject”, with respect to its overall cost, equipment lead
 8 times, and construction schedule. The execution of the LNP is scheduled to extend
 9 over a number of years. The keys to obtaining a firm price on such a megaproject
 10 are a well defined scope, quality level, and execution schedule. The EPC
 11 Agreement includes all these key objectives.

12 The Firm/Fixed price model takes into account the risk of the projected
 13 pricing over an extended time, in other words, “escalation”. In the case of a period
 14 longer than 3 or 4 years, the amount of escalation that a Consortium feels
 15 compelled to add to its pricing would include a large contingency because of the
 16 variability in the local and global markets of pricing. The amount of contingency
 17 has to be reasonably predictable and as a result the amount of contingency would
 18 be unacceptable to most owners. As a result, parties attempt to establish some
 19 means or mechanisms to keep the benefits of what can be quantified and priced in a
 20 reasonable range. [REDACTED]

21 [REDACTED]
 22 [REDACTED]

23 In recent years, most mega projects have been large projects such as dams,
 24 tunnels, bridges, railroads, airports, or oil and gas upstream projects. In the latter

1 case, there is an urgency that makes such projects schedule driven as well. In both
 2 cases, the need and desire on the part of the Owners for more fixed pricing makes
 3 these projects comparable with the LNP. With respect to these mega projects, I
 4 have seen comparable fixed and firm pricing and risk allocation for meeting project
 5 parameters for the engineer, equipment vendors, and the consortiums on these
 6 projects to the EPC Agreement between PEF and the Consortium. These are
 7 therefore typical best industry practice for allocating the responsibility to meet the
 8 Owner defined expectations (and regulators' expectations in the case of a nuclear
 9 power plant) exactly because they place the risk on the parties who are in the best
 10 position to control the risks when the project has adequate definition. With the

11 [REDACTED]
 12 [REDACTED] cost risk is shared appropriately for the escalation that neither party
 13 can control. This process has been followed by PEF in selecting an EPC
 14 Agreement for the LNP execution methodology and taking the necessary steps to
 15 obtain a Firm/Fixed pricing [REDACTED] the total contract price and builds
 16 upon the lessons learned from the past decade. The selection by PEF of a [REDACTED]
 17 firm/fixed price EPC Agreement was prudent and meets best industry practice.

18
 19 **Q. DID MANAGEMENT REASONABLY ASSURE ITSELF THAT THE**
 20 **BENEFICIAL TERMS AND CONDITIONS OF THE EPC AGREEMENT**
 21 **THAT ARE PRESERVED BY THE AMENDMENT ARE IN FACT**
 22 **BENEFICIAL TO THE COMPANY?**

23 **A.** Yes. PEF considered a number of factors to assure itself that the terms and
 24 conditions of the EPC Agreement were reasonable and prudent. As redacted copies

1 of other AP1000 EPCs became available in the public domain through other
2 regulatory proceedings, PEF reviewed these agreements to glean information that
3 was useful in ongoing negotiations with the Consortium. PEF also contracted with
4 other experienced companies to gauge typical commercial terms available in the
5 competitive nuclear market for EPC type contract delivery approaches. PEF further
6 established a core negotiating team and that core team remained in place
7 throughout the negotiation process and EPC contract signing. This PEF core team
8 spent over a year negotiating the EPC Agreement. When necessary, the PEF core
9 team relied upon the outside expertise from Burns & Roe ("B&R") to evaluate and
10 provide observations regarding the quality of the original cost book for the LNP
11 and preliminary schedule and PriceWaterhouseCoopers (PWC) to independently
12 review and provide observations to PEF regarding the EPC structure and the terms
13 and conditions. Both B&R and PWC provided international knowledge with
14 respect to engineering and construction and terms and conditions with respect to
15 mega projects. PEF considered all observations provided from both B&R and
16 PWC as part of the information it relied upon for its negotiations with the
17 Consortium.

18 The knowledge gained positioned PEF to better understand the market and
19 to use this insight to better leverage its position with the Consortium. In order to
20 preserve the ability to move the LNP forward, yet still continue negotiations with
21 the Consortium relative to the terms and conditions of the EPC Agreement, PEF
22 entered into a Letter of Intent ("LOI") in March 2008 with the Consortium which
23 allowed certain long lead equipment to proceed with its procurement. The
24 indicative price for the EPC Agreement was based on a number of factors,

1 including market conditions, risk allocation, and contingency. The final accepted
 2 price was a negotiated price which had been adjusted from that initially offered by
 3 the Consortium based on these factors as well as [REDACTED]. In addition,
 4 to reduce the impact of price uncertainties and other risks to PEF, PEF obtained
 5 language in the contract to require the Consortium to provide certain [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 Relative to schedule uncertainties, the EPC Agreement contained provisions to
 9 address changes in the schedule.

10 It is my opinion that PEF conducted its negotiations with the Consortium in
 11 finalizing the EPC Agreement based on internal and external information known to
 12 it at the time and based on information that was available to PEF at the time,
 13 including seeking advice from external experts in order to obtain reasonable and
 14 prudent terms and conditions that would best serve the Company, its shareholders,
 15 customers, and the State of Florida.

16 Senior management was closely involved in the negotiation of the EPC
 17 Agreement. Jeff Lyash, who was a member of the core team that was involved in
 18 the negotiations, was President and CEO of PEF at the time and was involved in
 19 PEF's decision to sign the EPC Agreement. Mr. Lyash approved the signing of the
 20 EPC Agreement. He was also a member of the SMC and provided the necessary
 21 overlap to inform the SMC regarding the terms and conditions of the EPC
 22 Agreement and the benefits it preserved for its customers. As a member of the
 23 SMC, Mr. Lyash was also involved in the presentations to the Board of Directors

1 relative to its decision to approve execution of the EPC Agreement in December
 2 2008.

3 At a meeting of the full Board of Directors held on December 10, 2008,
 4 Senior PEF Management reviewed the then current status of the LNP and reviewed
 5 with the Board the conditions under which PEF should consider proceeding with
 6 the execution of that project. The primary focus of that presentation was on the
 7 EPC Agreement, credible financing plans, possible appropriate joint ownership,
 8 and regulatory and political support for the project. The financial implications for
 9 the LNP were reviewed with the full Board of Directors. Management provided a
 10 summary presentation on the anticipated project schedule for both units with
 11 construction (non-safety) starting in 2010 and completion in 2017 (Unit 2). PEF
 12 Management anticipated NRC COLA approval for the start of safety construction
 13 by 2012.

14 Ultimately PEF Management recommended to the Board of Directors that
 15 the LNP go forward, including the execution of the EPC Agreement, provided that
 16 the [REDACTED]

17 [REDACTED]
 18 of the EPC Agreement. As part of the discussion, Management proposed the
 19 formation of an ad hoc Nuclear Project Oversight Committee to provide
 20 governance during the execution of the Project. The Board approved by formal
 21 resolution proceeding with the LNP, including the execution of the EPC Agreement,
 22 citing the requirement that the EPC Agreement contained the [REDACTED]

23 [REDACTED] recommended by PEF Management.

1 PEF considered all of the contractual provisions as a whole in determining
2 whether the EPC Agreement represented a reasonable overall deal given the market
3 conditions at the time. In summary, it is my opinion that Company management did
4 take reasonable steps to ensure that the terms and conditions that were agreed in the
5 executed EPC Agreement in December 2008 were beneficial to the Company, its
6 shareholders, customers, and the State of Florida. These beneficial terms and
7 conditions include the provisions for an orderly framework to accommodate
8 potential adjustments to the schedule such as the schedule shift that resulted from
9 the NRC's decision with respect to the LWA and the schedule shift based on
10 unforeseen conditions and circumstances that arose from the NRC decision up to
11 the Board's decision in March 2010 to suspend the LNP until the receipt of the
12 COL.

13
14 **Q WHAT IS THE OVERALL CONCLUSION OF YOUR EVALUATION OF**
15 **THE CONTINUATION OF LNP?**

16 **A.** Based upon my review of the EPC Agreement, analysis of the evolution of the
17 nuclear regulatory process since completion of Crystal River Unit 3, and its
18 experience with the U.S. nuclear industry since the early 1970s, I have concluded
19 that (1) it is reasonable for PEF to pursue the construction of new nuclear
20 generation at this time, (2) the EPC Agreement terms and conditions that were
21 preserved by the amendment to the EPC Agreement are beneficial to PEF and its
22 customers, (3) as compared to EPC contracts for other recent mega projects, these
23 beneficial terms and conditions are appropriate for the engineering, procurement
24 and construction of the LNP, and (4) the decision by PEF to partially suspend LNP

1 until receipt of the COL was an informed decision based on a rational, deliberate
2 decision-making process and, therefore, was both reasonable and prudent based on
3 the information known and that reasonably should have been known at the time the
4 decision was made.

5

6 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

7 **A. Yes.**

public corporations, government agencies and numerous professional society organizations. Dr. Galloway is also a blog writer for Engineering News Record discussing current trends, challenges and hot topics in the construction industry. She is regularly consulted by Universities regarding curriculum, engineering and construction management, women in engineering, mentoring and skill sets needed to succeed in the 21st century.

Dr. Galloway has assisted and been actively involved in developing and evaluating corporate-wide enterprise risk management programs for multinational companies around the world. Dr. Galloway's risk management experience also includes project risk identification, assessment and analysis, trend evaluations and risk reduction plans for public and private owners and contractors in the power, process, oil and gas, transportation, infrastructure, and building sectors. She has written and lectured extensively on the subject of risk management and has served as an in-house instructor on risk management. She has served as an advisor to multiple Owner and Contractor clients including board audit and compliance committees and has served as a member of various risk management assessment and independent review panels (IRP), including her appointment by both the Governors of Washington and Oregon to the IRP for the Columbia River Crossing Project.

Dr. Galloway is an internationally recognized leader in the civil engineering and construction arena. Dr. Galloway served as the first woman President of the American Society of Civil Engineers (ASCE), and is currently the Vice Chair of the U.S. National Science Board, appointed by President Bush with Senate confirmation in 2006 for a six-year term. As a leader in the field of engineering and construction, she is regularly consulted by private and public organizations, government entities, and international investment banks on trends in the industry, the media regarding current topics and events, universities seeking input on university curricula, mentor programs, engineering education, research and diversity issues, and professional societies relative to topics of interest to its membership. Her achievements have been highlighted in ADR Perspectives, Time magazine, CNN Lou Dobbs, Discovery Channel, Engineering News Record, and Federal Technology Watch. In addition to her appointment as Vice Chair to the National Science Board, she also serves on the Eastern Washington Governor's Business Advisory Council and the Discovery Science Channel's Board of Advisors. She has also served on the Purdue University Engineering Dean's Advisory Council. Dr. Galloway has been recognized by her peers and is an elected member to the National Academy of Construction, the Pan American Academy of Engineering, and the position of Fellow in several professional organizations.

Dr. Galloway has also served as a facilitator for workshops and as an instructor in several forums such as seminars and courses for private and public entities. She is currently a visiting professor at the Kochi University of Technology (KUT) in Kochi, Japan and has served as a guest professor lecturer at multiple universities including: the University of Wisconsin; Harbin University of Technology in Harbin, China; the University of Bologna, Italy; the Old Masters Program at Purdue University; University of British Columbia and the West Virginia's University Center for Women's Studies Programs.

Prior to joining Pegasus-Global, Dr. Galloway was the Chief Executive Officer and principle of The Nielsen-Wurster Group Inc. (Nielsen-Wurster), an international management consulting firm specializing in management consulting, risk management and dispute resolution. Her dispute resolution engagement experience includes projects throughout the world: refineries, offshore platforms, oil depots, LNG facilities, petrochemical plants, gas pipelines and compression modules, power plants (wind, nuclear, fossil fuel, gas-fired, combined-cycle, hydroelectric, waste-to-energy), hotels, casinos, stadiums, commercial offices, hospitals, universities, civic and convention centers, parking garages, process plants, wastewater treatment plants, landfills, airports, highways, bridges, tunnels, mass transit, railroads, port facilities, dams, bulk pharmaceutical plants, manufacturing and other projects.

She was also the Chief Executive of Nielsen-Wurster Asia-Pacific, a Nielsen-Wurster subsidiary corporation, which was located in Melbourne, Australia. In addition Dr. Galloway had served as President of another

Nielsen-Wurster subsidiary Nielsen-Wurster ESB, a joint venture with the Electricity Supply Board of Ireland that specialized in power plant maintenance software.

Before joining Nielsen-Wurster, Dr. Galloway was employed by CH2M Hill assigned to the \$1.6B Milwaukee Water Pollution Abatement Program (MWPAP). Her responsibilities at CH2M Hill on the MWPAP included preparation of project management training courses, project controls including estimating and critical path scheduling and tunnel inspection, being the first woman tunnel inspector in Wisconsin. In her last role at the MWPAP as the Master Program Scheduler her responsibilities included the preparation and updating of the Program Master Schedule, coordination of all project schedules, involvement with cost engineering functions, preparation of all program / project schedule progress reports for public and client presentations and monitoring compliance with court orders imposed on the Program. Other activities at the MWPAP included authoring a scheduling manual; preparation of bid documents, on-site tunnel inspection and coordination of a project manager's training series.

Registrations / Certifications

- Professional Engineer in the following US locations:
 - Arizona #16978
 - Colorado #28566
 - Florida #44498
 - Georgia #031939
 - Kansas #19495
 - Kentucky #17690
 - New Hampshire #12184
 - New Jersey #GE-29321
 - New York #060684-1
 - Ohio #72520
 - Pennsylvania #PE-046146-R
 - Washington #28262
 - Wisconsin #21786-006
 - Wyoming #PE-4974
- Professional Engineer in the following global locations:
 - Australia, Institute of Engineers, CPEng #1194740
 - Canada, Province of Manitoba #15061
- International Registry of Professional Engineers in the discipline of Civil Engineering, Construction Management by the United States Council for International Engineering Practice (USCIEP) #131
- Certified Examiner, National Council of Examiners for Engineering and Surveying (NCEES) #12046
- Certificate of Director Education, NACD
- Certified Project Management Professional (PMP) #0012-84
- Certified Forensic Claims Consultant (CFCC)
- Professional Member of the Royal Institution of Chartered Surveyors, Faculties of Project Management and Risk Management (MRICS)
- Private Pilot

Arbitration Experience/ DRB Panel Memberships

- Member of the ICDR Panel of Arbitrators
- Member of the AAA Commercial, Construction, and Large Complex Case Panels of Arbitrators
- Member of the AAA Board of Directors
- Member of the AAA National Construction Dispute Resolution Committee (NCDRC)
- Member of the Association for International Arbitration (AIA) Panel of Arbitrators
- Member of Arbitral Women (UK)
- Member of Dispute Resolution Board Foundation (DRBF) Panel
- Member of Caltrans DRB Panel

Dr. Galloway serves as an arbitrator with the American Arbitration Association on its Commercial and Construction panel; is a member of the International Center for Dispute Resolution Panel; is a member of

the AAA National Construction Dispute Resolution Committee (NCDRC); and serves as a member of the AAA Board of Directors. She is also a member of the AIA and Arbitral Women (UK) arbitration panel and a member of the Dispute Resolution Board Foundation (DRBF). She has served as a sole arbitrator, Chair and member of three-member panels arbitrating a large number of disputes involving commercial and construction issues of private and governmental facilities in the energy, process, and building industries with claims ranging from US \$100,000 to US\$100 million. Dr. Galloway has also served as both a consulting and testifying expert in numerous domestic (AAA) and international arbitration forums (International Chamber of Commerce (ICC) arbitrations, UNCITRAL, SAIC, London), with disputes ranging from US\$1 million to US\$6 billion.

Directorships

For-Profit Boards

- Pegasus Global Holdings, Inc., 2000 - Present
- Unionville Vineyards (Partner), 1986 - 2008
- The Nielsen-Wurster Group, Inc., 1984 - 2008
- Nielsen-Wurster Asia-Pacific Pty. Ltd., 2001 - 2008
- Unionville Aviation, 1987 - 2005
- Nielsen-Wurster ESB 1986 - 1989

Non-Profit Boards

- American Arbitration Association, 2009 – Present
- National Science Board, 2006 – Present
 - Vice Chair, 2008 – Present (ex-officio to all committees)
 - Chair, 60th Anniversary Committee, 2008-2010
 - Sustainable Energy Task Force Committee, 2007-2009
 - Audit & Oversight Committee, 2006-2008
 - Polar Research Committee, 2006-2008
 - Committee on Strategy & Budget, 2006-2008
 - International Task Force Committee, 2006-2008
- Pan American Academy of Engineering, 2006 - Present
- Order of the Engineer, National Board of Governors, 2004 - 2008
- Project Management Institute, College of Scheduling, 2003 - 2006
- American Society of Civil Engineers, 1992 - 1995, 2002 - 2005
- American Society of Civil Engineers Foundation, 2002 - 2005
- Construction Institute, 2004 - 2005
- Civil Engineering Research Foundation (CERF), 2002 - 2004
- Purdue University Engineering Alumni Board, 1992 - 2001
- Hoover Medal Award Board, 1996 - 1999

Advisory Boards / Committees

- Independent Review Panel for Columbia River Crossing Project, 2010 – Present
- Discovery Channel, Science Channel Board of Advisors, 2009 – Present
- Eastern Washington Governor's Business Advisory Council, 2007 - Present
- Construction Industry Institute Advisory Board, 2006 – 2009
- Construction Superconference Advisory Board, 2007-Present
- American Society of Civil Engineers Industry Leadership Council, 2008-present
- University of Nebraska Charles W. Durham School of Architectural Engineering and Construction Academic Review Team, 2009

- Purdue University Dean's Advisory Council, 2004 - 2007
- Engineers for a Sustainable World, Member of Advisory Board, 2003 - 2007
- National Science Foundation Engineering Directorate Advisory Committee, 2004 - 2006
- National Science Foundation International Directorate Advisory Committee, 2006
- Civil Engineering Research Foundation (CERF), Member of Corporate Advisory Board, 2001 - 2005
- Project Management Institute, Publications Advisory Board, 1991 - 1993
- Extraordinary Women in Engineering Project, 2004 - 2009

Editorial Boards

- ASCE Journal of Legal Affairs and Dispute Resolution Board, 2009 - Present

Awards and Honors

- National Association of Professional Executive Women (NAPEW) "Woman of the Year" in Prudence Audit Consultation, 2008
- G. Brooks Ernest Award, Cleveland (Ohio) Chapter of ASCE, 2007
- Engineering Excellence and Leadership Award, George Mason University, 2007
- CSI Michelangelo Award Panel of Judges, 2006 - 2007
- Pan American Academy of Engineering, 2006
- Sigma Kappa Colby Award, 2006
- "Who's Who in America," Edition 59, 2005
- Key Women in Energy-Global Awards, Energy Leaders Council, 2005
- National Academy of Construction, 2005
- "Who's Who of American Women," 2004 - present (listed since 1983)
- "Who's Who in the World," 2004- present
- "Who's Who in Science and Engineering," 2002-present (listed since 2002)
- YWCA Tribute to Women Honoree, 2004
- Society of Women Engineers' Upward Mobility Award, 2003
- Kentucky Governor's Award-Kentucky Colonel, 2004
- Lafayette High School Hall of Fame, Inducted 2001
- National Academy of Engineering: Celebration of Women, 2000
- White House Commission: 2000 Design Award, 1999
- Professional Leadership Award, National Professional Women in Construction, 1995
- Purdue University Distinguished Engineering Alumni Award, 1991
- Mercer County Engineer of the Year Award, 1990
- White House Fellowship Regional Finalist, 1990
- Glamour Magazine's Ten Outstanding Young Working Women for 1988
- Somerset County's Outstanding Women in Business and Industry, October 1987
- "Who's Who in America's Emerging Leaders," 1987 - Present
- Engineering News Record, "Top Women in Construction," October 1986
- "Distinguished New Engineer," Society of Women Engineers, 1980

Education and Courses

Education

- Ph.D., Infrastructure Systems (Civil) Engineering, Kochi University of Technology, Kochi, Japan
- M.B.A., New York Institute of Technology, New York, Magna cum Laude
- B.S., Civil Engineering (double major in Structures and Construction Management), Purdue University, West Lafayette, Indiana

Arbitration Training

- Managing the ICDR Guidelines on Information Exchange, (ICDR)
- Chairing the ICDR International Arbitration Tribunal, (ICDR)
- Pro Se: Managing Cases Involving Self-Represented Parties, (AAA)
- Arbitrator Ethics and Disclosure, (AAA)
- Chairing an Arbitration Panel: Managing Procedures, Process & Dynamics, (AAA)
- Arbitration Awards: Safeguarding, Deciding & Writing Awards, (AAA)
- International Training for Dispute Resolution, International Symposium in Advanced Case Management Issues, (AAA)
- Arbitrator II Training: Advanced Case Management Techniques, (AAA)
- Construction Industry Arbitrator Workshop, (AAA)
- The Dispute Review Board Administration and Practice Workshop, The Dispute Review Board Foundation
- Caltrans, CA Dispute Review Board Administration and Practice Workshop

Languages

Spanish - conversational / good understanding of written word

Industry/Academic Research

- National Research Council (NRC) Committee for Advancing the Productivity and Competitiveness of the U.S. Construction Industry Workshop, 2008 – 2009
- Construction Industry Institute Research Team RT 260-Reimbursable Contract –Co-Chair, 2008 – Present
- Kochi University of Technology, Doctorial Disscrtation, Engineering Education Reform, 2005

Webinar Instructor

- American Arbitration Association
- Project Management Institute College of Scheduling
- Engineer Your Life

Authored Books/Forwards/Chapters

- Galloway, Patricia D., *The 21st Century Engineer: A Proposal for Engineering Education Reform*, ASCE Press, Reston, VA American Society of Civil Engineers, 2007
- Forward to Kusayanagi, S.; Niraula, R.; and Hirota, Y., *Principles and Practice of International Construction Project Management*, EIKO-SHA, Tokyo, Japan, 2009
- Forward to Williams, F. Mary and Emerson Carolyn J. , *Becoming Leaders*, ASCE Press, Reston, VA, American Society of Civil Engineers, 2008
- Forward to Hatch, Sybil E., *Changing our World: True Stories of Women Engineers*, ASCE Press, Reston, VA, American Society of Civil Engineers, 2006
- “Anticipating Problems: Project Risk Assessment and Project Risk Management”, co-authored with K. Nielsen, Chapter 6, *Collaboration Management, New Project and Partnering Techniques*, edited by H. Schaughnessy, John Wiley & Sons 1994

Memberships

- American Society of Engineering Education (ASEE)
- American Nuclear Society (ANS)
- American Society of Civil Engineers (Fellow) (ASCE)
 - Past President, 2004 - 2005

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- National President, 2003 - 2004
- National President-Elect, 2002 - 2003
- International Director of the Board, August 1992 - 1995

Board Activities

- Society Awards Committee, 2004 - 2009
- Chair, Past Presidents Council, 2004 - 2005
- Chair, Executive Compensation Committee, 2004 - 2005
- Executive Committee Liaison to the Construction Institutes Board of Directors, 2003 - 2005
- Chair, Membership Committee, 2001 - 2002
- Member, Communications Committee, 2000 - 2002
- Member, Committee on Strategic Initiatives, 2000 - 2001
- Chair, Task Committee on Women in Civil Engineering, 1998 - 2000
- Member, Engineers Joint Contract Documents Committee, 1999 - 2000
- Member, ASCE Hoover Medal Board of Award, 1996 - 2000
- Member, Finance Committee, 1997 - 1999
- Chair, International Activities Committee, 1994 - 1997 (Member 1992 - 1999)
- Member of the Membership Committee, 1994 - 1996
- Member, Long Term Strategic Planning Committee, 1994 - 1995
- Chair, Audit Committee, 1994 (Member 1993 - 1994)
- Member, Visioning Task Force Committee, 1993 - 1994
- Chair, New York Convention, 1992
- Member, Teller's Committee, 1991
- Vice Chair, Orlando Convention Committee, 1990

Professional Activities Committee (PAC)

- Co-chair, Engineer 2025 Summit, "Summit on the Future of Civil Engineering," June 2006
- Member, Committee on Conventions and Conferences, 1988 - 1991
- Chair, Sessions Committee on Professional Activities, 1988 - 1990
- Member, Engineering Management Committee, 1986 - 1990

Technical Activities Committee (TAC)

- Member, Professional Construction Management Committee, 1978 - 1989
- Member, Committee on Underground Tunneling, 1983 - 1986
- Subcommittee Chair, Professional Construction Management Committee, 1978 - 1985
- Session Moderator, ASCE National Spring Convention, May 1983 (Philadelphia)
- Session Moderator, ASCE National Spring Convention, May 1981 (New York)
- Co-chair, Specialty Conference on "Reduced Liability through Better Inspection and Specifications," San Diego, February 1981
- Member, National Inspection Committee, 1979 - 1981
- Member, National Specifications Committee, 1979 - 1981

Local Section Activities

- District 1 Council, Zone I, New Jersey Section Representative, 1995 - 2001
- New Jersey Section Strategic Planning Subcommittee Chair, 1996 - 1999
- Wisconsin Section, Student ASCE Club Advisor to the Milwaukee School of Engineering, October 1978 - July 1981
- Association for the Advancement of Cost Engineering International (Fellow) (AACEI)
 - Chair, National Committee-Women in Project Controls, 2004 - 2005
 - Member, National Planning and Scheduling Committee, 2003-present
 - Member, Executive Director Search Committee, 2009-present

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- Chi Epsilon (National Civil Engineering Honor Society)
- Construction Institute
- Construction Management Association of America (CMAA)
- Construction Industry Institute
 - Corporate Advisory Board Member, 2007 – Present
 - Strategic Planning Committee-2009-Present
- Dispute Review Board Foundation
- Institution of Civil Engineers, United Kingdom (Fellow) (ICE)
- Institution of Engineers - Australia (Fellow)
- Extraordinary Women Engineers Project
 - Chair, National Steering Committee, 2003 - 2006
 - Member of Advisory Board, 2007 - Present
- Japan Society of Civil Engineers (JSCE)
- National Academy of Construction
- National Association of Corporate Directors
- National Council of Examiners for Engineering and Surveying (NCEES)
- National Society of Professional Engineers (NSPE)
- Order of the Engineer, 1978 - Present
- Pan American Academy of Engineers
- Project Management Institute (PMI)
 - Speaker and Instructor Bureau, 1990 - Present
 - Chair, 3rd International College of Scheduling Conference, Orlando, Florida, April 2006
 - Chair, Board of Directors, College of Scheduling, 2003 - 2006
 - Chair, 2nd International College of Scheduling Conference, Scottsdale, Arizona, May 2005
 - Chair, International College of Scheduling Conference, Montreal, Canada, April 2004
 - Member, Publications Advisory Board, 1991 - 1993
- Society for Social Management Systems
 - Chair, 2006 - Present
- Society of Petroleum Engineers
- Society of Women Engineers
 - New York Section President, 1982 - 1983
 - National Committee Chair for Headquarters Site Study, 1982 - 1983
 - National Committee Chair for Teller's Committee, 1981 - 1982
 - Wisconsin State President, 1980 - 1981
 - Wisconsin State Secretary, 1979 - 1980
- Tau Beta Pi (Honorary Member)
- Women in Engineering Programs & Advocates Network (WEPAN)
 - Mentor for Women College Engineering Students
- World Federation of Engineering Organizations (WFEO), 2004 - 2008
 - ComTech Committee Vice President, 2004 - 2007
 - US Representative to WFEO, 2006
 - Member of WFEO President's Advisory Board, 2006
 - Co-Chair, World Summit on Women in Science, Engineering and Technology, November 2006

Technical Papers and Presentations

Dr. Galloway is a prolific writer and world renowned speaker having authored over 120 papers, 30 peer-reviewed journal articles and nearly 200 public speaking (including over 35 keynote addresses) engagements regarding leadership, corporate governance, ethics and professionalism, communication, risk

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management, dispute resolution, contract administration, program and project management, project controls, women in engineering and other topics (*see attached Technical Papers and Presentations*). Dr. Galloway has also been featured in many international publications:

- Curiosity Project, Discovery Channel, Screening in 2011
- TouchStone International Learning Management System, Online English Teaching Program, February 2010
- Interview with Patricia D. Galloway, *ADR Perspectives*, February 2010
- *Federal Technology Watch*, "Interview with National Science Board Vice Chair", January 26, 2009
- Profile of Patricia Galloway. Hatch, Sybil, *Changing Our World: True Stories of Women Engineer*, American Society of Civil Engineers, 2006
- "Building a Better Role Model", Continental Airline's *In-Flight Magazine*, November 2005 Issue
- Bad Idea. You'll Flunk Out. *Time Magazine*, Science Section, First Person: Pat Galloway, Authored by Deirdre Van Dyk, March 7, 2005 Issue
- America's Infrastructure, Live Media Radio and Television appearances in over 25 cities across the United States, October 2004
- *Engineering Marvels-Seven Modern Engineering Wonders of the World*, Co-host to ABC / Discovery Channel Television Series, April, 2004
- "Going International: Profit or Peril?" Interview with Patricia D. Galloway, Executive Vice President, The Nielsen Wurster Group, Inc., *Worldwide Projects*, Spring 1993

Program/Project Risk Management

Invited and Keynote Presentations

- Keynote Address "Role, Responsibility and Risk Considerations of the Engineer Regarding Sustainability", Florida Engineering Society Annual Meeting, Naples, Florida, August 8, 2008
- Keynote Speaker, "Engineer, Contractor and Owner Risk in Constructed Projects," Wisconsin Transportation Builders Association WISDOT Contractor Engineer Conference, Madison, Wisconsin, January 31, 2008
- Keynote Address, "How Leaders Should be Viewing Risk Today," CII Annual Conference, Orlando, Florida, August 1, 2007
- Keynote Address, "Risks and Liabilities in Specifying HDPE Pipe," Mountain States Concrete Pipe Association 5th Annual Concrete Pipe Seminar, Illinois, February 28, 2007
- Keynote Address, "Engineer, Contractor and Owner Risk in Constructed Projects," Wisconsin Transportation Builders Association WISDOT Contractor Engineer Conference, Madison, Wisconsin, January 31, 2007
- Keynote Address, "Risks and Liabilities in Specifying HDPE Pipe," Mountain States Concrete Pipe Association 5th Annual Concrete Pipe Seminar, Salt Lake City, Utah, October 26, 2006
- Keynote Address, "Risks and Liabilities in Specifying HDPE Pipe," American Concrete Pipe Association Fall Short Course, Charlotte North Carolina, October 16, 2006

Publications

- "Design-Build/EPC Contractor's Heightened Risk - Changes in a Changing World" *Journal of Legal Affairs and Dispute Resolution*, American Society of Civil Engineers, February 2009, Volume 1, Number 1."
- Risk Based Processes that Assure Anti-Corruption Processes and Promote Transparency and Governance in Resource Extraction Industries, co-authored with Kris Nielsen, International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, September 10 - 15, 2006
- "Risk Management-Now More Than Ever", Published Proceeding, World Engineers' Congress, Session C2. Sustainable Development of Mega-cities on Model of Transportation Structure, Model of Public Transportation First and so on, Shanghai, China, November 2 - 5, 2004
- Basic Project Execution Risk Management, co-authored with J. Dignum, Proceedings, North American Tunneling 2002 Conference, Seattle, Washington, May 18 - 22, 2002

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- Risk Management Analysis Techniques for Projects With Significant Environmental Issues, co-authored with K. Nielsen, Proceedings, ASCE-SAS Second Regional Conference and Exhibition, Beirut, November 16 - 18, 1995
- "Project Risk Management-A Necessity for Today's Engineered Projects", Proceedings of the American Society of Civil Engineers Saudi Arabia Section First Regional Conference and Exhibition on Advanced Technology in Civil Engineering, Manama, Bahrain, September 18 - 20, 1994
- "Anticipating Problems: Project Risk Assessment and Project Risk Management," Co-authored with Kris Nielsen, Chapter 6, "*Collaboration Management, New Project and Partnering Techniques*," edited by H. Shaughnessy, John Wiley and Sons 1994
- Project Risk Management-Achieving Goals, co-authored with K. Nielsen, Proceedings, 11th INTERNET World Congress on Project Management, Florence, Italy, June 16 - 19, 1992

Conference Presentations / Teaching / Instruction

- Design-Build/EPC Contractor's Heightened Risk - Changes in a Changing World, Canadian Society of Civil Engineering Conference, May 30, 2009
- Role, Responsibility and Risk Considerations Of the Engineer Regarding Sustainability Florida Association of County Engineers and Road Superintendents, Doral, Florida June 26, 2008
- "The 21st Century Engineer", Seminar to the Civil Department, Civil Department Advisory Committee and to the Engineering Department, University of British Columbia (UBC) Vancouver, British Columbia, Canada, May 1, 2008
- Viewing Risks and Liability in Light of Sustainability, The Environment and Critical Infrastructure, IBTTA Facilities Management Conference, Orlando, Florida, April 29, 2008
- Role Responsibility and Risk Considerations for the Engineer Regarding Sustainability, Kentucky American Concrete Pipe Association Conference, Louisville, Kentucky, October 5, 2007
- How Leaders Should be Viewing Risk Today, AES Global Engineering & Construction Conference, San Francisco, California, September 18, 2007
- "Risks and Liabilities in Specifying HDPE Pipe", American Concrete Pipe Association Fall Short Course, San Antonio, Texas, October 13, 2006
- Risk Based Processes that Assure Anti-Corruption Processes and Promote Transparency and Governance in Resource Extraction Industries, International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, September 10 - 15, 2006
- Basic Project Execution Risk Management, North American Tunneling 2002 Conference, Seattle, Washington, May 18 - 22, 2002
- Panelist, "Using Risk Management Techniques to Improve the Return on Investment," The Global Construction Superconference, London, United Kingdom, November 5 - 6, 2001
- Presenter, "Risk Assessment & Management," Foster Wheeler Law Department Conference, Warren, New Jersey, October 23 - 24, 2001
- The Industry Forum for Contractors, Owners and Their Attorneys, "The Nielsen-Wurster Group Examines the Risks That Must be Recognized and Managed by Owners and Contractors in a Lump Sum, EPC Project," prepared by William K. Kerivan, presented by Patricia D. Galloway and Marianne C. Ramey, The 14th Annual Construction Industry Networking Nirvana, The Millennium Construction Superconference, The Fairmont Hotel, San Francisco, California, December 9 - 10, 1999
- Managing the Unknowns in Restarting Projects, Inter-Pacific Bar Association Ninth Annual Meeting and Conference, Shangri-La Hotel, Bangkok, Thailand, April 30 - May 4, 1999
- Panel Moderator, "Dealing with Risks on Nuclear Waste Sites," The Environmental Superconference, Washington, D.C., April 28 -29, 1999
- Panel Moderator, "Minimizing Risk in Design / Build Projects," Construction Superconference, San Francisco, California, December 10 - 11, 1998
- In-House Training Seminar, "Project Risk Management," Panama Canal Commission, Panama, March 9 - 12, 1998

DR. PATRICIA D. GALLOWAY

- Co-presenter, "Panel of Experts-Specific Risks to Consider," World Conference on Construction Risk III, Paris, France, April 25 - 26, 1996
- Risk Management Analysis Techniques for Projects With Significant Environmental Issues, ASCE-SAS Second Regional Conference and Exhibition, Beirut, November 16 - 18, 1995
- Co-presenter, "Panel of Experts-Specific Risks to Consider," World Conference on Construction Risk II, Singapore, October 5 - 6, 1995
- Project Risk Management-A Necessity for Today's Engineered Projects, ASCE-India Section, Calcutta, India, January 30, 1995
- Co-presenter, "Construction Management and Administration, Construction Claims and Project Risk Management," In-House Training Seminar, Pt. Wijaya Karya, Jakarta, Indonesia, January 23 - 27, 1995
- "New Risks with CPM Scheduling-Tricks of the Trade", Nielsen-Wurster Seminar on Emerging Risks in Construction: How to Minimize, Manage and Avoid Disputes, New Orleans, Louisiana, May 10 - 12, 1995; Indian Wells, California, October 19 - 21, 1994
- "A New Game Plan for Intelligent Risk Identification / Allocation, Charting the Course to the Year 2000-Together!", DART, Hyatt-Lexington, Lexington, Kentucky, October 16 - 19, 1994
- Project Risk Management-A Necessity for Today's Engineered Projects, Tarumanagara University, Jakarta, Indonesia, May 2, 1994
- Co-presenter, "Project Risk Management," Panama Canal Commission, Panama, April 20 - 22, 1994
- International Construction Law-Opportunities and Risks in the '90s, The American Bar Association Forum on The Construction Industry, Stouffer Mayflower Hotel, Washington, D.C., November 5 - 6, 1992
- Project Risk Management-Achieving Goals, 11th INTERNET World Congress on Project Management, Florence, Italy, June 16 - 19, 1992
- Co-chairman, Moderator, "Reducing Risks and Liability through Better Specifications and Inspection," ASCE Specialty Conference, San Diego, California, Spring 1981

Management / Prudence / Performance Audits

Publications

- "New Day for Prudence" co-authored with K. Nielsen and Charles W. Whitney, *Public Utilities Fortnightly*, December 2009
- "Design-Build/EPC Contractor's Heightened Risk-Changes in a Changing World", *Journal of Legal Affairs and Dispute Resolution*, American Society of Civil Engineers, February 2009, Volume 1, Number 1."
- "The Ubiquitous Requirement of Performing to High International Standards", co-authored with K. Nielsen, published Proceedings, The Second Civil Engineering Conference in the Asian Region, Tokyo, Japan, April 16 - 18, 2001
- "Combining PURPA, Prudence and Avoided Cost Rate Design; A New Cost Engineering Environment", co-authored with K. Nielsen, Proceedings, American Association of Cost Engineers 9th Annual Mid Winter Symposium Transactions, San Francisco, California, February 1987. Reprinted, *Cost Engineering*, Volume 31, No. 1, page 16, January 1989
- "The 5-Year Living Schedule", co-authored with R. Cochran, American Association of Cost Engineers Annual Convention, Atlanta, Georgia, June 1987
- "Preparing for the Utilities' Future-Managing the Prudence Issues", co authored with K. Nielsen, *Electric Potential*, Volume 2, No. 4, July - August 1986
- "Utilities Forced Delays-Controllable or Uncontrollable", co-authored with K. Nielsen, Proceedings, American Association of Cost Engineers Annual Convention, Chicago, Illinois, June 1986
- "Preparing for Utilities Future-An 'Attack Plan' for Minimizing Disallowable Costs In Outage and Future Capital Construction", co-authored with K. Nielsen, American Association of Cost Engineers, 8th Annual Mid-Winter Symposium Transactions, New Orleans, Louisiana, February 1986; Project 2, 5th Annual Outage Symposium Proceedings, Cambridge, Massachusetts, May 1986

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- "Utility Prudence Time Impact Evaluation", American Association of Cost Engineers Annual Convention Transactions, Denver, Colorado, July 1985
- "The Prudence Management Audit: A New Challenge For the Civil Engineer", co-authored with K. Nielsen, American Society of Civil Engineers Spring Convention, Denver, Colorado, April 1985
- Performance Audits, co-authored with D. Law, Proceedings, Project Management Institute Symposium, Toronto, Ontario, Canada, October 1982

Conference Presentations / Teaching / Instruction

- Utilities Serving Our Needs: US Experience in Serving Its Communities, National Engineering Forum-Energy, Water and Telecommunications, Cooma, NSW, Australia, April 21, 1999
- Panel Moderator, "The Multi-Billion Dollar Issue Facing the Nuclear Power Industry: Decommissioning Versus Life Extension," The Future of the US and International Environmental Industry, Washington, D.C., November 10 - 12, 1997
- Co-presenter, "Electric Utility Capital Project Prudence Issues," National Association of Regulated Utility Commissioners Annual Meeting, Hartford, Connecticut, May 1985
- Co-presenter, "Prudence Concepts," American Association of Cost Engineers, Ramapo Section, April 1985
- Performance Audits, Project Management Institute Symposium, Toronto, Ontario, Canada, October 1982

Program/Project Management

Publications

- "Engineer's Liability Considerations in Specifying Corrugated High Density Polyethylene (HDPE) Pipe", *Journal of Professional Issues in Engineering Education & Practice* American Society of Civil Engineers, January 2008
- Managing Risks on Defense Projects Using CPM Scheduling, co-authored with Ed Blow, Scheduling The Next Generation: Third PMI College of Scheduling Conference, Orlando, Florida, April 23 - 26, 2006
- "CPM Scheduling - How Industry Views Its Use, Cost Engineering": *The AACE International Journal of Cost Estimation, Cost / Schedule Control, and Project Management*, January 2006
- "Is Our Perspective Truly Global?" American Society of Civil Engineers, *ASCE News*, April 2004
- "CPM Scheduling-Its Importance in Monitoring and Demonstrating Construction Progress", published proceedings, Japan Society of Civil Engineers, JSCE First International Symposium on Construction and Project Management-Human Resources Development under Globalization, Tokyo, Japan, October 16 - 17, 2003
- Privatization and the Use of IVHS in the 1990s, Proceedings, ASCE Transportation Conference on IVHS, co-authored with K. Nielsen and M. Ramey, San Diego, California, October 1995
- The Utilization of Computer Technology in the Presence of Evidence, co authored with Pamela Moon, La Gestion de los Asuntos Mercantiles en los Juzgados de Primera Instancia, Madrid, Spain, October 26, 1994
- "CPM Schedule Delay: Window Analysis, Concurrency, and Proof", co authored with K. Nielsen and M. Ramey, Nielsen-Wurster Seminar on Emerging Risks in Construction: How to Minimize, Manage and Avoid Disputes, New Orleans, Louisiana, May 10 - 12, 1995; Indian Wells, California, October 19 - 21, 1994
- International Contract Administration Issues: Project Documentation, Dispute Proofs, Programmes, Productivity, co-authored with K. Nielsen, IDLI Conference, Rome, Italy, December 12, 1991
- "Delivering a Successful Project, Proceedings, Civil Engineering International Conference on Asian Infrastructure", Sustainable Development and Project Management, Manila, Philippines, February 19 - 20, 1998
- "Defining Scheduling", The Nielsen Wurster Group Construction Dispute Proofs Seminar Handbook, Conference, New Orleans, Louisiana, 1988 and 1989; Seattle, Washington, 1987; Lake Buena Vista, Florida, May 18 - 20, 1983; Minneapolis, Minnesota and Denver, Colorado, April 1984; Tampa, Florida and Boston, Massachusetts, May 1984
- Preparing a Project Control Specification, co-authored with K. Nielsen, Proceedings of Eleventh Annual PROJECT / 2 Utility Users Group Conference, Birmingham, Alabama, November 17 - 19, 1986

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- Failure Proof Your Projects, co-authored with K. Nielsen, Consulting Engineer, June 1985
- "Scheduling the Super Projects, preprint, Engineering and Construction Projects, The Emerging Management Roles", ASCE Specialty Conference, New Orleans, Louisiana, March 17 - 19, 1982
- "Schedule Control for CPM Projects", co-authored with K. Nielsen, *Journal of the Construction Division*, Proceedings of the Society of Civil Engineers, Volume 107, No. CO2, June 1981

Conference Presentations / Teaching / Instruction

- "Managing Your Projects to Minimize Disputes", Lecture, Construction Management School, Central Washington University, November 9, 2009
- "Trends in the Construction Industry" to the U.S. Law Firm Group Construction Committee, Buffalo, NY, October 23, 2009
- Design-Build Contracting in a Changing World, CH2M Hill in-house design-build conference, Denver, CO, October 10, 2008
- Reading Between the Pipes IKO Concrete Pipe Association, Kentucky, June 27, 2008
- Mega Projects - A Primer for Finance (or How Can Finance Help Improve Results) Nexen Finance Forum Scottsdale, AZ - Co-presentation with Jack Dignum February 19, 2008
- Managing Risks on Defense Projects Using CPM Scheduling, Scheduling The Next Generation: Third PMI College of Scheduling Conference, Orlando, Florida, April 23 - 26, 2006
- CPM Scheduling and How the Industry Views Its Use, Association for the Advancement of Cost Engineering International's 49th Annual Meeting, New Orleans, Louisiana, June 26 - 29, 2005
- Speaker, "CPM Scheduling - How Industry Views its Use," Second Annual PMI College of Scheduling Conference, Scottsdale, Arizona, May 22 - 24, 2005
- CPM Current Trends in Education: A Comparative Study Between Europe, Asia and North America, On the Road to Better Scheduling-PMICOS Conference, Montreal, Canada, April 25 - 28, 2004
- PMI Scheduling Practice Standard Panel, On the Road to Better Scheduling-PMICOS Conference, Montreal, Canada, April 25 - 28, 2004
- Moderator, "The Impacts to Public Contracting in a Post 9 / 11 Environment," Luncheon Panel, Construction Super Conference, San Francisco, California, December 2003
- CPM Scheduling, Visiting Professor, Special Lecture Series, Kochi University of Technology, Kochi, Japan, November 22, 2003
- Mission of the Civil Engineer in the Movement of Globalization, Michigan Tech University, Houghton, Michigan, January 16, 2003
- Moderator, "Conception to Birth of a Project," Infrastructure 2000, San Francisco, California, June 7, 2000
- Harmonizing Japanese and US Practices for Effective Project Management, Taisei Corporation M.I.T. Conference, Tokyo, Japan, November 1, 1996
- Employing Effective Project Management to Achieve Project Success, Taisei Corporation P.M. Conference, Tokyo, Japan, October 31, 1996
- "Tricks of the Trade New Uses and Misuses of CPM Scheduling", BCQS Project Managers Chartered Quantity Surveyors, The Nielsen-Wurster Group Construction Management Consultants, Whitman Breed Abbott & Morgan Construction Attorneys' Seminar on Controlling Construction Risk and Conserving Your Cash, Radisson Hotel, Grand Cayman Islands, February 26, 1996
- Privatization and the Use of IVHS in the 1990s, ASCE Transportation Conference on IVHS, San Diego, California, October 1995
- Co-presenter, "Construction Scheduling: Preparation, Liability, Claims and Damages," Panama Canal Commission, June 12 - 16, 1995
- The Utilization of Computer Technology in the Presence of Evidence, co authored with Pamela Moon, La Gestion de los Asuntos Mercantiles en los Juzgados de Primera Instancia, Madrid, Spain, October 26, 1994

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- "CPM Schedule Delay: Window Analysis, Concurrency, and Proof", Nielsen-Wurster Seminar on Emerging Risks in Construction: How to Minimize, Manage and Avoid Disputes, New Orleans, Louisiana, May 10 - 12, 1995; Indian Wells, California, October 19 - 21, 1994
- "The Contractor's Right to Finish Early", Nielsen-Wurster Seminar on Emerging Risks in Construction: How to Minimize, Manage and Avoid Disputes, New Orleans, Louisiana, May 10 - 12, 1995; Indian Wells, California, October 19 - 21, 1994
- Co-presenter, "Project Manager nei settore delle costruzioni," Visiting Professor, University of Bologna SINNEA, Bologna, Italy, May 25 - 27, 1994
- Co-presenter, "Project Management for Design and Construction," Panama Canal Commission, Panama, June 28 - July 2, 1993
- Co-Presenter, "International Contract Administration Issues: Project Documentation, Dispute Proofs, Programmes and Productivity," Training Workshop on International Construction Contracts and Contractor Claims, The International Development Law Institute (IDLI), Rome, Italy for the Finnish International Development Agency (FINNIDA), Helsinki, Finland, October 13 - 16, 1992
- Contract Administration, Masters Degree Course, SINNEA, Istituto Di Studi Per La Cooperazione E La Piccola E Media Impresa, Bologna, Italy, September 25, 1992
- Effective Construction Contract Administration, University of Wisconsin-Madison, College of Engineering, Madison, Wisconsin, April 7 - 10, 1992
- International Contract Administration Issues: Project Documentation, Dispute Proofs, Programmes, Productivity, IDLI Conference, Rome, Italy, December 12, 1991
- Co-presenter, "Inefficiency Seminar," Florida Department of Transportation, Deland, Florida, August 1991
- Co-presenter, "Advanced CPM Scheduling," Pennsylvania Department of Transportation, West Palm Beach, Florida, May 1991
- Co-presenter, "Contract Administration," West Virginia Division of Energy, Charleston, West Virginia, March 1991
- Co-presenter, "CPM Scheduling," Kentucky Department of Transportation, Lexington, Kentucky, December 1989
- CPM Scheduling Seminar, Reale, Fosse & Perry, P.C., Pittsburgh, Pennsylvania, November 1989
- Claims Avoidance Seminar, Loney Construction Co., Inc., Keene, New Hampshire, January 1989
- Minimization of Claims Seminar, Weyerhaeuser Paper Company, Jackson, Mississippi; Birmingham, Alabama, November 1988
- "Defining Scheduling", The Nielsen-Wurster Group Construction Disputes Seminar, New Orleans, Louisiana, April 18 - 20, 1988
- Scheduling Super Projects, Visiting Professor, University of Wisconsin, Madison, Wisconsin, January 1987
- Preparing a Project Control Specification, Eleventh Annual PROJECT / 2 Utility Users Group Conference, Birmingham, Alabama, November 17 - 19, 1986
- Construction Claims Prevention and Analysis, Visiting Professor, University of Wisconsin, Madison, Wisconsin, May 1985, June 1986 and May 1987
- "Defining Scheduling", The Nielsen Wurster Group Construction Dispute Proofs Seminar, Conference, New Orleans, Louisiana, 1988 and 1989; Seattle, Washington, 1987; Lake Buena Vista, Florida, May 18 - 20, 1983; Minneapolis, Minnesota and Denver, Colorado, April 1984; Tampa, Florida and Boston, Massachusetts, May 1984
- "The Schedule, Its Use and Development", The Nielsen Wurster Group Scheduling Seminar, Conference, Atlanta, Georgia, October 1983
- Session Moderator, "Super Projects, Case Studies," ASCE Spring Convention, Philadelphia, Pennsylvania, May 1983
- Session Moderator, "Project Management Control," ASCE Spring Convention, New York, New York, May 1981

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Leadership / Ethics / Professionalism

Invited and Keynote Presentations

- Keynote Address, "Using Organizations to Advance Tomorrow's Leaders", Keynote Luncheon Speaker, Annual Conference, Association for Women in Science Advance Workshop, Washington, D.C., October 29, 2009
- Keynote Address, "Leadership-How Professional Organizations Can Assist", NSF Advance Workshop, Washington, DC., October 29, 2009
- Keynote Luncheon Address, "Ethics and Professionalism-their Importance to Engineers in the 21st Century," Kentucky Society of Professional Engineers, 2008 Annual Convention, Louisville, Kentucky, April 24, 2008
- Keynote Address, "Engineer's Role in Public Policy," International Symposium on Social Management Systems, Three Gorges Dam, China, March 11, 2007
- Keynote Address, "Engineering Leadership in the 21st Century," Second Annual Luncheon at George Mason University, Fairfax, Virginia, January 30, 2007
- Keynote Address, "The Engineer's Role and Responsibility in Specifying HDPE Pipe," American Concrete Pipe Association Short Course, Nashville, Tennessee, May 5, 2006
- Keynote Address, "Leadership, Stewardship and Control," 9th Australian International Performance Management Symposium, Canberra, Australia, March 1, 2006
- Keynote Address, "What it Takes to be a Leader," Evening with Industry; California Polytechnic State University, San Luis Obispo, California, January 27, 2006
- Keynote Address, "The Engineer's Role and Responsibility in Specifying HDPE Pipe," American Concrete Pipe Association Short Course, Las Vegas, Nevada, November 9, 2005
- Keynote Address, "Leadership," *Visiting Professor, Special Lecture Series, Kochi University of Technology*, Kochi Japan, November 22, 2004
- Opening Keynote Speaker, "Leadership and Professionalism," Rebuilding Together Annual Convention, Seattle, Washington, October 2004
- Keynote Speaker, "The Engineers Role in Public Policy, Globalization and Ethics and Professionalism," ASCE Annual Leadership Conference, New Orleans, Louisiana; New York, New York; Portland, Oregon; Chicago, Illinois, January - March 2004
- Keynote Speaker, "Ethics and Professionalism," *Tau Beta Pi Annual Awards and Induction Dinner at the University of Florida*, December 2003
- Keynote Speaker, "Ethics and Professionalism," Society of American Military Engineers Annual Conference, Seattle, Washington, May 2003
- Keynote Dinner Address, "Motivating the Engineer," Project Management Institute, Delaware Chapter Meeting, Wilmington, Delaware, October 1989

Publications

- "Ethics, Standards of Care and Your Engineering Profession", *Kentucky Engineer*, Official Publication of the Kentucky Society of Professional Engineers, Volume 44, Fall 2007 Panel Member, "Key to Company Success in Today's Global Market," *Shaping the Future: Global Talent Leadership in Engineering*, Princeton, New Jersey, November 2, 2006
- The Urgent Need for Leadership in Project Controls Management Ethic, Proceeding, 9th Australian International Performance Management Symposium, Canberra, Australia, February 2, 2006
- "Innovation-Engineering a Better Engineer for Today's Work Force", *Journal of Leadership and Management in Engineering*, American Society of Civil Engineers, Volume 4, Issue 4, pp. 127 - 132, October 2004
- "Lest We Forget-The Engineering Heroes", American Society of Civil Engineers, *ASCE News*, September 2004
- "What Do Dmitrov, Russia, and a Civil Engineer's Dream Have in Common?", American Society of Civil Engineers, *ASCE News*, August 2004

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- "Engineers Laugh at Lawyers and Legal Issues, but Should They?", American Society of Civil Engineers, *ASCE News*, July 2004
- "Governance Restructuring: Leading ASCE into the Future", American Society of Civil Engineers, *ASCE News*, June 2004
- "ASCE's Institutes: Inclusive or Divisive", American Society of Civil Engineers, *ASCE News*, March 2004
- "Professionalism-Have We Forgotten?", American Society of Civil Engineers, *ASCE News*, February 2004
- "Public Policy: Friend or Foe in Advancing the Civil Engineering Profession", American Society of Civil Engineers, *ASCE News*, January 2004
- "Our Enthusiasm Can Be Persuasive", American Society of Civil Engineers, *ASCE News*, December 2003
- "Faculty Licensure-Will it Better the Profession?" American Society of Civil Engineers, *ASCE News*, November 2003
- "Innovative Benefits In a Small Consulting Firm", *ASCE Journal of Leadership and Management in Engineering*, Winter 2001, Volume 1, Number 1, pp. 45 - 47
- "Adjust Work Arrangements to Entice, Retain Professionals", *Engineering News Record*, Viewpoint Column, January 3 - 10, 2000

Conference Presentations / Teaching / Instruction

- Ethics and Professionalism-Their Importance in the Oil and Gas Industry, Offshore Technology Conference, Houston, Texas, May 1, 2006
- Professionalism, Visiting Professor, Harbin University of Technology, Harbin, China, November 1, 2004
- Leadership and Professionalism, Boeing Corporation, Seattle, Washington, July 2004
- Leaders and Leadership, Visiting Professor, Special Lecture Series, Kochi University of Technology, Kochi, Japan, November 20, 2003
- Roles and Responsibilities of a Board Director, ASCE Board Orientation, Nashville, Tennessee, November 2003
- Innovative Benefits in a Small Consulting Firm, 1999 ASCE Civil Engineering Conference and Exposition, Charlotte Convention Center, Charlotte, North Carolina, October 17 - 20, 1999
- Panel Moderator, "Management of Construction Risk on Infrastructure Projects in Latin America," The Latin American Market, The Fourth Annual Conference, Turnberry Isle Resort & Club, Aventura, Florida, November 17 - 19, 1998
- Project Controls and Their Significance on International Projects, AusAID, Canberra, Australia, August 21, 1998
- Delivering a Successful Project, Worldwide Infrastructure Partnerships, New York, New York, June 24, 1998
- Civil Engineering with Stars and Stripes, presented at a joint ASCE / ICE Meeting, Epsom, United Kingdom, July 5, 1994

Arbitration / Mediation / Dispute Resolution

Publications

- Delay: Use of CPM Schedules for Concurrency, Allocation, Proof, and Window Analysis, Proceedings, Hurry Up and Slow Down: Dealing with Delays in Construction, American Bar Association Forum on the Construction Industry Conference, New York, New York, January 23, 1997
- The Contractor's Right to Finish Early, Proceedings, Hurry Up and Slow Down: Dealing with Delays in Construction, American Bar Association Forum on the Construction Industry Conference, New York, New York, January 23, 1997
- CPM Schedule Delay: Window Analysis, Concurrency, and Proof, co authored with K. Nielsen and M. Ramey, World Conference on Construction Risk, Paris, France, April 28 - 29, 1994
- Disruption / Productivity Cost Claim Analyses, co-authored with K. Nielsen, Construction Disputes-Analysis and Management, Winnipeg, Canada, November 1 - 5, 1993

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- CPM Scheduling Delay: Window Analysis, Concurrency and Proof, co authored with K. Nielsen and M. Ramey, Construction Disputes-Analysis and Management, Winnipeg, Canada, November 1 - 5, 1993
- Overcoming Schedule Delay-Analyzing and Resolving this Project Nemesis, co-authored with K. Nielsen, IIR National Construction Conference, Sydney, Australia, August 28 - 29, 1991
- "International Construction Dispute Proofs", co-authored with K. Nielsen, Nordnet '91 Transactions: The Practice and Science of Project Management, Trondheim, Norway, June 3 - 5, 1991
- Pricing and Proving Contractor Claims for Changes in Scope and Unforeseen Conditions, Proceedings, Construction Litigation Superconference, Andrews Conferences, Inc., April 11 - 12, 1991
- "Computerized Document Control-The Expert Witness's View", co authored with Pamela Moon, *The International Construction Law Review Journal*, Volume 8, Part 2, April 1991
- Pricing and Proving Contractor Claims for Changes in Scope and Unforeseen Conditions, Proceedings, Construction Litigation Superconference, Andrews Conferences, Inc., December 6 - 7, 1990
- Contract Administration, Proceedings, Arbitration and Mediation Construction Claims Seminar, American Arbitration Association, Charleston, West Virginia, November 1, 1990
- "Evaluating the Contractor's Right to Finish Early", co-authored with K. Nielsen, Project Management Institute Book of Proceedings, Calgary, Alberta, Canada, October 16, 1990
- "Concurrent Schedule Delay in International Contracts", co-authored with K. Nielsen, *The International Construction Law Review*, Volume 7, Part 4, pp. 386 - 401, October 1990
- "Schedule Delay Concurrency Issue Analysis & Proof", co-authored with K. Nielsen, Proceedings, International Cost Congress, Paris, France, April 1990
- Pricing, Proving and Calculating Construction Claims, Proceedings, Construction Litigation Superconference, Andrews Conferences, Inc., April 6 - 7, 1989
- "Proof Development for Construction Litigation", co-authored with K. Nielsen, *The American Journal for Trial Advocacy*, Volume 7, No. 3, Cumberland School of Law of Samford University, Birmingham, Alabama, Summer 1984; Yearbook of Construction Articles, Volume 4, Federal Publications, 1985
- "Second Guessing the Engineer", co-authored with K. Nielsen, *Civil Engineering*, American Society of Civil Engineers, November 1985
- "Avoiding Lengthy and Costly Litigation by Negotiation Resolution Methods", co authored with K. Nielsen, Proceedings, American Society of Civil Engineers Spring Convention, Denver, Colorado, April 1985
- Window Analysis: An Innovative Concept to Schedule Delay Analysis, co authored with K. Nielsen, Project Management Institute, Philadelphia, Pennsylvania, October 1984
- Schedule Delay: A Productivity Analysis, co-authored with K. Nielsen, and J. Leverette, Project Management Institute National Convention Proceedings, Houston, Texas, October 1983

Conference Presentations / Teaching / Instruction

- Moderator, The Cultural and Legal Landscape to Consider – Regional Considerations for International Construction Projects, 8th Annual Miami International Arbitration Conference, March 21 - 22, 2010
- Construction Delay-How Opposing Experts Can Come to Different Conclusions From the Same Set of Facts: Honest Mistake, System Failure or Deceptive Practice, Construction Claim Advisor - Audio Conference, November 12, 2007
- Panel Member, "Intellectual Honesty in Proving Delay," Project Management Institute College of Scheduling Conference, Vancouver Canada, April 17, 2007
- Common Disputes on Light Rail Transit Projects and How to Resolve Them, Construction Superconference, San Francisco, California, December 7 - 8, 2006
- Cumulative Impact, Current Trends In Construction Law, International Project Management and Dispute Resolution: The South Central American Project, São Paulo, Brazil, June 5 - 6, 2006
- Panelist, "Intellectual Honesty in Proving Delay," Federal Board of Contract Appeals, Hilton Alexandria Mark Center, Alexandria, Virginia, April 3, 2001

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- Analyzing Schedule Delay, Minimizing Risks in Construction Projects and Resolving Construction Disputes, Hong Kong, September 28 - 29, 1998
- Delay: Use of CPM Schedules for Concurrency, Allocation, Proof, and Window Analysis, Hurry Up and Slow Down: Dealing with Delays in Construction, American Bar Association Forum on the Construction Industry Conference, New York, New York, January 23, 1997
- The Contractor's Right to Finish Early, Hurry Up and Slow Down: Dealing with Delays in Construction, American Bar Association Forum on the Construction Industry Conference, New York, New York, January 23, 1997
- Delay: Use of CPM Schedules for Concurrency, Allocation, Proof, and Window Analysis, Taisei Corporation P.M. Conference, Tokyo, Japan, October 31, 1996
- CPM Schedule Delay: Window Analysis, Concurrency, and Proof, World Conference on Construction Risk, Paris, France, April 28 - 29, 1994
- Disruption / Productivity Cost Claim Analyses, Construction Disputes-Analysis and Management, Winnipeg, Canada, November 1 - 5, 1993
- Co-presenter, "Schedule Delay Analysis & Early Completion," Nielsen Wurster Seminar on Managing Risk and Minimizing Disputes in Construction Contracts, Hilton Head Island, South Carolina, October 6 - 8, 1993
- CPM Scheduling Delay: Window Analysis, Concurrency and Proof, Construction Disputes-Analysis and Management, Winnipeg, Canada, November 1 - 5, 1993
- Co-presenter, "Schedule Delay Analysis," WASHTO Annual Conference, Oklahoma City, Oklahoma, June 23 - 24, 1993
- Presenter, "Early Completion Claim Analysis and Expert Delay Analysis," The Nielsen-Wurster Seminar on Construction Issues Facing the Public Transportation Industry, Sacramento, California, April 28 - 30, 1993
- Co-presenter, "Utilizing an Expert Effectively in ADR," Resolving Disputes in International Construction Contracts through ADR, Geneva, Switzerland November 12 - 13, 1992
- "Analyzing Scheduling Delays by Use of Window Analysis", The Nielsen Wurster Seminar on Managing and Resolving Construction Disputes, Lake Tahoe, Nevada, March 1992; San Diego, California, April 1992; Key West, Florida, October 1992
- Overcoming Schedule Delay-Analyzing and Resolving this Project Nemesis, IIR National Construction Conference, Sydney, Australia, August 28 - 29, 1991
- Pricing and Proving Contractor Claims for Changes in Scope and Unforeseen Conditions, Construction Litigation Superconference, Andrews Conferences, Inc., April 11 - 12, 1991
- Pricing and Proving Contractor Claims for Changes in Scope and Unforeseen Conditions, Construction Litigation Superconference, Andrews Conferences, Inc., December 6 - 7, 1990
- Contract Administration, Arbitration and Mediation Construction Claims Seminar, American Arbitration Association, Charleston, West Virginia, November 1, 1990
- Co-presenter, "Construction Dispute Seminar," Florida Department of Transportation, Tallahassee, Florida, August 1989
- Pricing, Proving and Calculating Construction Claims, Construction Litigation Superconference, Andrews Conferences, Inc., April 6 - 7, 1989
- "Analyzing Schedule Delays By Use of Window Analyses", The Nielsen Wurster Group Construction Disputes Seminar, San Antonio, Texas, April 1991; New Orleans, Louisiana, April 18 - 20, 1988
- "Construction Delay Analysis", The Nielsen-Wurster Group Construction Disputes Seminar, New Orleans, Louisiana, April 18 - 20, 1988
- Pricing Contractor's Claims, American Society of Civil Engineers Course, "Construction Claims," Anchorage, Alaska, March 1986; San Francisco, California, May 1987
- Window Analysis: An Innovative Concept to Schedule Delay Analysis, Project Management Institute, Philadelphia, Pennsylvania, October 1984
- "The Use of Schedules in Claim Preparation", The Nielsen Wurster Group Construction Dispute Proofs Seminar, Conference, New Orleans, Louisiana, 1988 and 1989; Seattle, Washington, 1987; Lake Buena Vista,

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Florida, May 18 - 20, 1983; Minneapolis, Minnesota and Denver, Colorado, April 1984; Tampa, Florida and Boston, Massachusetts, May 1984

- Schedule Delay: A Productivity Analysis, , Project Management Institute National Convention, Houston, Texas, October 1983

Climate Change / Sustainability

Invited and Keynote Presentations

- Keynote Address, "The Role of the 21st Century Engineer in the Midst of Global Engineering Crisis" International Symposium on Futures in Civil & Construction Engineering Institution, Seoul Korea, June 17, 2008
- Keynote Address, "The Framework of Sustainability for Engineering Design Considerations" Society for Social Management Systems 2008 Kochi, Japan. March 6, 2008
- Keynote Address, "Role, Responsibility and Risk Considerations of the Engineer Regarding Sustainability," 10th Annual INFTRA-ARHCA-CEA 2007 Transportation Conference, Alberta, Canada, March 19 - 20, 2007
- Keynote Address, "The Mission of the Civil Engineer in the Movement of Globalization," Vechellio Special Lecture Series, Virginia Tech, Blacksburg, Virginia, October 2004
- Annual Convention Keynote Speaker, "Engineer for a Sustainable World," Stanford University, California, September 2004
- Keynote Speaker, "Does Scheduling Make Any Sense in Today's World?" On the Road to Better Scheduling-PMICOS Conference, Montreal, Canada, April 25 - 28, 2004

Publications

- Problems in Underground Construction: Lessons Learned from Failures and Methods Developed for Success, co-authored with M. Petrov, Proceedings, Underground Space for Sustainable Urban Development, ITA-AITES 2004 World Tunnel Congress, Singapore, May 2004
- "Mission of the Civil Engineer in the Movement of Globalization", published proceedings, Japan Society of Civil Engineers, JSCE First International Symposium on Construction and Project Management-Human Resources Development under Globalization, Tokyo, Japan, October 16 - 17, 2003
- "Mission of the Civil Engineer in the Movement of Globalization", ASCE *Journal of Leadership and Management in Engineering*, Journal Issue 3, Volume 3, pp. 122 - 127, July 2003

Conference Presentations / Teaching / Instruction

- Responding to Climate Change: The Role of the Engineer ASCE International Program, American Society of Civil Engineers, International Program, November 6, 2008
- The Engineer's Role in Public Policy, Institution of Civil Engineers Sustainable Development Forum, New York, New York, September 9, 2005
- Problems in Underground Construction: Lessons Learned from Failures and Methods Developed for Success, Underground Space for Sustainable Urban Development, ITA-AITES 2004 World Tunnel Congress, Singapore, May 2004

Engineering Education

Invited and Keynote Presentations

DR. PATRICIA D. GALLOWAY

- Keynote Address, "The 21st Century Engineer", The University of Texas at Arlington, Arlington, Texas, April 14, 2010
- Keynote Opening Address, Society of Social Management Systems 2010 Annual Symposium, Kochi University, Kochi, Japan, February 4, 2010
- Keynote Address, "Challenges Facing the Civil Engineer of the 21st Century", Canadian Society of Civil Engineering Conference, New Foundland, May 28, 2009
- Keynote Luncheon Address, "The 21st Century Engineer" Engineer's Week, University of Kentucky, Lexington, KY, February 20, 2009
- Keynote Dinner Speaker, "The Critical Need to Change the Face of Science and Engineering", NSF Advance Conference, Charleston, West Virginia, October 21, 2008
- Keynote address, "Mentoring for the 21st Century", annual Hoover Lecturer, Iowa State University, Ames, Iowa, October 1, 2008
- Keynote Dinner Speaker, "The 21st- Century Engineer: A Proposal for Engineering Education Reform", Cal Poly Pomona College of Engineering, Pomona CA, May 30, 2008
- Keynote Dinner Speaker, "Being A Leader In The 21st Century" ASCE Younger Member Evening Lecture, San Diego CA, May, 27, 2008
- Keynote Dinner Speaker, "The 21st Engineer," ASCE, The G. Brooks Earnest Awards Dinner, Cleveland, Ohio, October 9, 2007
- Keynote Address, "Engineering Education Reform," International Symposium on Social Management Systems, Three Gorges Dam, China, March 9, 2007
- Keynote Address, 2007 Western Regional Younger Member Council Banquet and Awards Ceremony, The Seattle ASCE Younger Member Forum, Seattle, Washington, February 24, 2007
- Keynote Address, "Innovation-Engineering A Better Engineer for Today's Workforce," Construction Innovation Forum, NOVA Awards Dinner, Dearborn, Michigan, April 2004

Publications

- New Trends in Engineering Management Education ASEE Conference, Pittsburgh PA, June 23, 2008
- Galloway, Patricia D., "*The 21st Century Engineer: A Proposal for Engineering Education Reform*", Reston: American Society of Civil Engineers, 2007
- "Bachelor's Plus, The Rationale for 'Raising the Bar' in Engineering Education", *Licensure Exchange*, Publication of National Council of Examiners for Engineering and Surveying, Clemson, South Carolina, March 2004

Conference Presentations / Teaching / Instruction

- Panel Moderator, "*The Future of Science and Engineering Research and Education as the National Science Foundation Celebrates Its 60th Anniversary*". Advancing Science Serving Society (AAAS) Annual Conference "Bridging Science and Society," San Diego, Ca, February 20, 2010
- Panel Moderator "*The Creative Science Studio (CS squared)*" Advancing Science Serving Society (AAAS) Annual Conference "Bridging Science and Society," San Diego, Ca, February 19, 2010
- Panel Member, "Engineering Education Reform-Solutions for Professional Survival," Workplace Dynamic Panel, September 28, 2006
- Panel Member, "Engineering Education Reform-Solutions for Professional Survival," American Association of Engineering Societies, Chicago, Illinois, June 19 - 20, 2006
- Engineering Educational Reform, Panelist, Curriculum Reform Leader's Conference, Purdue University, West Lafayette, Indiana, August 30, 2005

Women in Engineering / Diversity Issues

Invited and Keynote Presentations

Curriculum Vitae



DR. PATRICIA D. GALLOWAY P.E, CPENG, PMP, MRICS, CFCC
Chief Executive Officer

Areas of Expertise

- Arbitrator
- Corporate Governance
- Risk Management
- Risk Assessment and Audits
- Prudence Analysis and Audits
- Performance Audits
- International Contracting
- Trend Evaluation / Analytics
- Industry Best Practices
- Contract Administration
- Project Control Systems
- Engineering and Construction Management
- Project / Program Management
- Project and Program Estimating
- Change Management
- Standards of Care
- Claims Prevention
- Claims Analysis / Negotiation
- Scheduling and Delay
- Disruption / Productivity
- Cumulative Impact

Professional Experience

As Chief Executive Officer of Pegasus Global Holdings, Inc., Dr. Galloway oversees all aspects of the firm's Risk Management, Management Consulting and Strategic Consulting business services. Dr. Galloway has consulted on matters covering the entire project delivery process- cradle to grave – in the following industries: power; oil and gas / petrochemical; transportation; infrastructure; and buildings. She has worked on behalf of private and public sector clients globally.

With over 30 years of experience, Dr. Galloway has extensive international experience having worked in over 60 countries and having worked on numerous domestic and international engagements including mega-projects, that by industry definition, involve large investment projects, which attract a high level of public attention or political interest because of substantial direct and indirect impacts on the community, environment and budgets and are generally defined as major infrastructure projects costing more than US\$1 billion. Representative engagements that Dr. Galloway has either been a member of or led teams on include: Vogtle Nuclear Units 1,2,3,4, United States; Iatan 1 and 2 clean coal-fired plants, United States; City of Winnipeg Capital Improvement Program, Canada; Panama Canal; Sound Transit Light Rail Program, United States; DeKalb County GA School District School Program, United States; London's Crossrail Project, United Kingdom; Sakhalin Island Oil and Natural Gas Pipeline Project, Russia; Venice Lagoon Floodgate Project, Italy; Xiaolangdi Dam, China; Melbourne Citylink Project, Australia; Princeton University Capital Building Program, United States; Cadereyta Refinery Project, Mexico; Rockport Works Steel Mill Facility, United States; International LNG Terminal, North America; HBJ Pipeline Project, India; Murrin Murrin nickel-cobalt mine, Western Australia; Phoenix Light Rail Transit Program, United States; Tsing Ma Bridge, Hong Kong; and over 30 nuclear power plant projects.

Dr. Galloway's management consulting experience includes performance, prudence, and management audits and strategic advice regarding governance, management structures and performance, operations, management processes, contract development and form, project and program management, project controls, contract administration, claims avoidance and others. She has testified as an expert witness in numerous proceedings including federal and state courts, public utility rate hearings, and domestic and international arbitrations (see arbitration experience below). She holds a certificate of Director Education by the National Association of Corporate Directors and has served on a number of private and non-profit boards. She lectures and presents seminars on leadership, standard of care, engineering education, contract administration and project controls. Dr. Galloway has been retained as a keynote speaker and in-house trainer via webinars by both private and

DR. PATRICIA D. GALLOWAY

- Keynote Address "Using Organizations to Advance Tomorrow's Leaders", Keynote Luncheon Speaker, Annual Conference, NSF ADVANCE, Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers, Program Meeting on "Broadening Participation", NSF/Association for Women in Science Advance Workshop, Washington, D.C., October 29, 2009
- Keynote Luncheon Speaker, "What it Takes to Be a Leader," National Women in Construction Leadership Forum, San Francisco, California, September 2004
- Keynote Address, "The Love for Amelia Earhart and the Undying Quest for her Discovery," Zonta Awards Luncheon, Albany, New York, May 2004
- Keynote Address, "What it takes To Be A Leader," Women in Engineering Leadership Institute (WELI) Leadership Summit, *University of Connecticut*, Windsor, Connecticut, May 2004
- Keynote Speaker, "Breaking Through the Glass Ceiling," HDR Women's Forum 2000, Embassy Suites, Kansas City, Missouri, March 31, 2000

Publications

- "What Girls Want From Their Profession," *Geo-Strata*, Volume 6, Issues 1 pp.19-21, January / February 2006
- Extraordinary Stories of Women in Engineering, National Academy of Engineering, May 3, 2004
- "Emily, Amelia, et. al: Who Are These Women And Why Should We Care?," *American Society of Civil Engineers, ASCE News*, May 2004
- Leadership: Women's Role in Engineering, A Civil Engineered World, a publication of ASCE's International Affairs Department, Volume 13, Issue 1, March 2000
- The 2-Engineer Family, Proceedings, Society of Women Engineers, National Convention, Detroit, Michigan, June 1982

Conference Presentations / Teaching / Instruction

- How to Increase the Number of Women in Engineering ADVANCE luncheon, University of Washington, Seattle, WA, October 23, 2008.
- The Critical Need to Change the Face Of Science and Engineering, NSF sponsored workshop-Building Diversity in Higher Education: Strategies for Broadening Participation in the Sciences and Engineering, Charleston, WVA, October 21, 2008
- Becoming a Leader in the 21st Century, West Virginia University Center for Women's Studies Residency Program, March 31-April 4, 2008
- Footprints for Success: Being a Female Leader in Engineering, National Symposium for the Advancement of Women in Science (NSAWS), Harvard University, April 13, 2007
- Creating an Effective Media / Public Affairs Campaign, First National Summit on the Advancement of Girls in Math and Science, Washington, D.C., May 15, 2006
- Panelist, "Ground Breaking Women in Construction," Los Angeles, California, September 21, 2005
- Panelist, "Rising to Lead," Women's Leaders Tour, Advancement of Technology for Women (ATW), Albany, New York, Austin, Texas; San Jose, California, April - May 2004
- Panelist, "How to Become a Leader," Women in Engineering Leadership Institute (WELI) Leadership Summit, University of Connecticut, Windsor, Connecticut, May 2004
- Moderator, "High Heels are Replacing Hard Hats in the Boardroom," Construction Superconference, The Fairmont Hotel, San Francisco, California, December 8, 2000
- So Mrs. Roebing-What's Your Side of the Story? a one-woman play, 1995 ASCE Annual Convention, San Diego, California, October 1995 (over 50 play performances, multiple venues, 1995-1998)
- The 2-Engineer Family, Society of Women Engineers, National Convention, Detroit, Michigan, June 1982

PATRICIA D. GALLOWAY		
<i>Representative Engagement Experience [Does not include engagements where served as arbitrator]</i>		
Industry	Type	Project Name
Power	Nuclear	Nuclear Plant (United States) - confidential
Power	Nuclear	Proposed Nuclear Plant (United States) - confidential
Power	Nuclear	Vogtle 3 & 4, United States (Georgia)
Power	Nuclear	Seabrook Unit 2 Nuclear Generating Station, United States (New Hampshire)
Power	Nuclear	Millstone Unit 3, United States (Hartford, Connecticut)
Power	Nuclear	Cooper Nuclear Station, United States (Nebraska)
Power	Nuclear	Connecticut Yankee Nuclear Plant, United States (Connecticut)
Power	Nuclear	Millstone Point Nuclear Generating Station, Units 2 and 3, United States (Waterford, Connecticut)
Power	Nuclear	Indian Point Nuclear Power Plant Unit 3, United States (New York)
Power	Nuclear	Texas Utilities Stockholder Litigation, United States (Texas)
Power	Nuclear	Salem and Hope Creek Nuclear Power Plants, United States (New Jersey)
Power	Nuclear	South Texas Nuclear Plant, United States (Texas)
Power	Nuclear	Trojan Nuclear Power Plant, United States (Oregon)
Power	Nuclear	Shoreham Nuclear Plant, United States (Long Island, New York)
Power	Nuclear	Nine Mile Power Plant, United States (New York)
Power	Nuclear	Bellefonte Nuclear Power Plant, United States (Jackson County, Alabama)
Power	Nuclear	Millstone 2 Nuclear Power Plant, Waterford, United States (Connecticut)

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Industry	Type	Project Name
Power	Nuclear	Cooper Nuclear Station, United States (Nebraska)
Power	Nuclear	Washington Public Power Supply Nuclear Plants, United States (Washington)
Power	Nuclear	Comanche Peak Steam Nuclear Electric Station, Units 1 & 2, United States (Texas)
Power	Nuclear	Clinton Nuclear Generating Station, Decatur, United States (Illinois)
Power	Nuclear	Pilgrim I Nuclear Power Plant, United States (Massachusetts)
Power	Nuclear	Vogtle 1 & 2, Nuclear Generating Station, United States (Waynesboro, Georgia)
Power	Nuclear	Palo Verde Nuclear Generating Station, United States (Palo Verde, Arizona)
Power	Nuclear	Perry Nuclear Generating Station, United States (Ohio)
Power	Nuclear	Seabrook Nuclear Generating Station Unit 1 and Unit 2, United States (New Hampshire)
Power	Nuclear	Millstone 3 Nuclear Generating Station, United States (Connecticut)
Power	Nuclear	Waterford Unit 3, United States (Louisiana)
Power	Nuclear	Shoreham, United States (New York)
Power	Nuclear	Hanford, United States (Washington)
Power	Nuclear	Wolf Creek, United States (Kansas)
Power	Nuclear	Maine Yankee, United States (Maine)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Kansas City Power and Light (KCP&L) Iatan Units 1&2
Power	Cogeneration/ Combined Cycle/Fossil Fuel	La Paloma Combined Cycle Power Plant, United States (California)

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Industry	Type	Project Name
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Sacramento Municipal Utility District Consumnes Combined Cycle Plant, United States (California)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Marshall Islands Power Plant Demolition, United States Territory (Marshall Islands)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Paiton Units 1 & 2, Indonesia
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Paiton Units 7 & 8, Indonesia
Power	Cogeneration/ Combined Cycle/Fossil Fuel	JEA Northside, United States (FL)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Osbourne, Australia
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Jiu Jiang Power Plant, China
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Scherer Fossil Power Plant, United States (Forsyth, Georgia)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Cleveland Electric Illuminating Company, Fossil Power Plants, United States (Cleveland, Ohio)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Jeffrey Energy Center, United States (Kansas)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Wolf Hollow Plant, United States (Texas)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Covert Plant, United States (Michigan)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Dearborn Industrial Generation Project, United States (Michigan)

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Industry	Type	Project Name
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Illinois Power Company, United States (Illinois)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	SMUD Cosumnes Power Plant and Pipeline Project, United States (California)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Fossil Power Plant, Bulgaria
Power	Geothermal	Wayang Windu Geothermal Power Project, Indonesia (Java)
Power	Hydro	Casecnan Multipurpose Project II
Power	Hydro	Xiaolangdi Dam, China
Power	Hydro	Casecnan Multi-Purpose Project, Philippines (Northern Luzon)
Power	Hydro	Cirata II, Indonesia
Power	Hydro	Sulpher Creek Hydro Power Plant, United States (California)
Power	Hydro	Mill to Bull Creek Tunnel, United States (California)
Power	Waste to Energy	Valorsul Waste-To-Energy Plant, Europe (Portugal)
Power	Wind Power	Brazos Wind Farm, United States (Texas)
Power	Wind Power	Caprock Wind Farm, United States (New Mexico)
Infrastructure / Transportation	Roadways	Shawnee Mission Parkway, United States (Kansas)
Infrastructure / Transportation	Roadways	KDOT Project, United States (Kansas)
Infrastructure / Transportation	Roadways	151st Street Bridge Project, United States (Olathe, Kansas)
Infrastructure / Transportation	Roadways	New Jersey Turnpike, Section 5B-3, United States (New Jersey)

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Industry	Type	Project Name
Infrastructure / Transportation	Roadways	City Link, Melbourne, Australia (Victoria)
Infrastructure / Transportation	Roadways	Turnpike Operations Management System, United States (Florida)
Infrastructure / Transportation	Roadways	Texas Department Of Transportation Group 5 Matter, United States (Texas)
Infrastructure / Transportation	Roadways	State Highway US 290 Travis County, United States (Texas)
Infrastructure / Transportation	Roadways	Asphalt Resurfacing Project, Highway 9, United States (Allen, Nebraska)
Infrastructure / Transportation	Roadways	Electronic Toll Collection System, United States (Florida)
Infrastructure / Transportation	Roadways	Houston Ship Channel Cable-Stayed Bridge, United States (Baytown, Texas)
Infrastructure / Transportation	Roadways	Blue Route Section 200
Infrastructure / Transportation	Roadways	Kenton County Lexington-Covington Road, United States
Infrastructure / Transportation	Roadways	Lief Erikson Tunnel, United States (Minnesota)
Infrastructure / Transportation	Bridges	Veteran's Expressway, Tampa, United States (Florida)
Infrastructure / Transportation	Bridges	Interstate 75, Kentucky (Lexington and Covington Road) United States (Kentucky)
Infrastructure / Transportation	Bridges	Vancouver Millennium Sky Train Project, Canada (British Columbia)
Infrastructure / Transportation	Bridges	Hillsborough Avenue Bridge, United States (Tampa, Florida)
Infrastructure / Transportation	Bridges	Tsing Ma Bridge, China (Hong Kong)
Infrastructure / Transportation	Bridges	Nairn Avenue Overpass Project, Canada (Manitoba)
Infrastructure / Transportation	Bridges	New Smyrna Beach Bridge, United States (Florida)

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Industry	Type	Project Name
Infrastructure / Transportation	Bridges	Hastings Bridge, Hastings, United States (Minnesota)
Infrastructure / Transportation	Bridges	Post Tensioned Segmental Bridge, Bexar County, United States (Texas)
Infrastructure / Transportation	Bridges	Interstate Highway Bridges, United States (Gary, Indiana)
Infrastructure / Transportation	Bridges	Gloucester Inlet Bridge, United States (Massachusetts)
Infrastructure / Transportation	Airports	Yosemite International Airport, United States (Fresno, California)
Infrastructure / Transportation	Airports	Port of Seattle-Task 7, United States (Seattle, Washington)
Infrastructure / Transportation	Airports	International Airport, Malaysia
Infrastructure / Transportation	Airports	Kuala Lumpur International Airport, Malaysia (Kuala Lumpur)
Infrastructure / Transportation	Airports	Indianapolis International Airport, United Airlines Maintenance Operation Center, United States (Indiana, Indianapolis)
Infrastructure / Transportation	Telecommunication	AT&T Broadband, United States (Illinois, Missouri, Michigan)
Infrastructure / Transportation	Defense	TADRS (Tactical Air Defense Radar System), Australia (Melbourne)
Infrastructure / Transportation	Rail	Sound Transit Light Rail, United States (Washington)
Infrastructure / Transportation	Rail	Phoenix Light Rail Transit, United States (Arizona)
Infrastructure / Transportation	Rail	Pentagon City Subway Station, United States (Virginia)
Infrastructure / Transportation	Rail	Rohr Transit Cars, United States (Washington, D.C)
Infrastructure / Transportation	Rail	North Harlem To Brewster (Hudson Harlem Lines) Electrification Program, United States (New York)
Infrastructure / Transportation	Rail	London Crossrail Project, United Kingdom (London)

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Industry	Type	Project Name
Infrastructure / Transportation	Rail	Taisci-Metro Extension Project, Bulgaria (Sofia)
Infrastructure / Transportation	Rail	Regional Fast Rail Project (RFRP), Australia (Victoria)
Infrastructure / Transportation	Rail	Southern New Jersey Light Rail Transit System, United States (New Jersey)
Infrastructure / Transportation	Rail	Singapore Mass Rail Transit, Singapore
Infrastructure / Transportation	Rail	Toronto Transit Commission Subway Line Expansion, Canada (Toronto, Ontario)
Infrastructure / Transportation	Rail	Shaw Subway Station, United States (Washington, D.C.)
Infrastructure / Transportation	Rail	Stamford Railroad Station Stamford, United States (Connecticut)
Infrastructure / Transportation	Ship / Seaport	Central Terminal Expansion Claim Review, United States (Washington)
Infrastructure / Transportation	Ship / Seaport	Port of Seattle United States (Washington)
Infrastructure / Transportation	Ship / Seaport	Port of Seattle, United States (Washington)
Infrastructure / Transportation	Ship / Seaport	Lahad Datu Port Expansion, Malaysia
Infrastructure / Transportation	Ship / Seaport	Panama Canal Transfer Station, Panama Canal Zone
Infrastructure / Transportation	Ship / Seaport	Riofil / Manila South Harbor Pier 5 Extension, Philippines
Infrastructure / Transportation	Ship / Seaport	City of Venice Floodgate Bid Review, Italy
Infrastructure / Transportation	Ship / Seaport	F/V Arctic Storm Ship Conversion, United States (Washington)
Infrastructure / Transportation	Ship / Seaport	Deep Sea Drilling Ship, United States (Texas)
Infrastructure / Transportation	Seminar / Training	Japan Bank for International Cooperation

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Industry	Type	Project Name
Infrastructure / Transportation	Seminar / Training	West Virginia DOT Training Seminar, United States (West Virginia)
Infrastructure / Transportation	Seminar / Training	Claims Seminar, Texas Department of Transportation, United States (Texas)
Infrastructure / Transportation	Seminar / Training	Project Risk Management Seminar: Panama Canal
Infrastructure / Transportation	Seminar / Training	Partnering Seminar, United States (Kentucky)
Infrastructure / Transportation	Seminar / Training	Florida Department Of Transportation, United States (Florida)
Infrastructure / Transportation	Seminar / Training	Seminar: Division Of Energy, United States (West Virginia)
Infrastructure / Transportation	Other	American Concrete Pipe Association (ACPA) Independent Research, United States (Tennessee)
Infrastructure / Transportation	Other	Japan Ministry of Land, Infrastructure and Transport, Analysis of US Public Construction Contracting Practice, Japan
Infrastructure / Transportation	Other	Fish Barrier Project (FBP) United States (Washington)
Infrastructure / Transportation	Other	Seattle Public Utilities (SPU) and SeaTran, United States (Washington)
Industrial / Process	Chemical / Petrochemical	Palmetto Lime Facility, United States (Columbia, South Carolina)
Industrial / Process	Chemical / Petrochemical	PET Production Plants, Argentina, Holland, Spain
Industrial / Process	Chemical / Petrochemical	Zinc Recovery Plant, United States (California)
Industrial / Process	Chemical / Petrochemical	FMC Baltimore Sulfentrazone Plant, United States (Maryland)
Industrial / Process	Chemical / Petrochemical	Seraya Island Petrochemical Project, Singapore (Seraya Island)
Industrial / Process	Oil / Gas	Nations Petroleum Steam – Flood Project, United States (California)
Industrial / Process	Oil / Gas	PML Project (Shinwha Claim) Singapore
Industrial / Process	Oil / Gas	Minerva Project

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Industry	Type	Project Name
Industrial / Process	Oil / Gas	PEMEX Combisa EPC 22, Mexico
Industrial / Process	Oil / Gas	GASYRG (Willbros)
Industrial/Process	Oil/Gas	PEMEX, Cantarell Project, Mexico
Industrial / Process	Oil / Gas	Foster Wheeler SINCOR Coker Project
Industrial / Process	Oil / Gas	Luberef Refinery Project, Saudi Arabia
Industrial / Process	Oil / Gas	PEMEX Demineralization Plant, Mexico (Tula, Hidalgo)
Industrial / Process	Oil / Gas	Perez Companc-Norcen-Corod Oritupano-Leona Oil Fields, Eastern Venezuela
Industrial / Process	Oil / Gas	Altona Refinery Expansion, Australia (Melbourne)
Industrial / Process	Oil / Gas	INCO 92 Project, Gas Recompression Plants, Venezuela (Lake Maracaibo)
Industrial / Process	Oil / Gas	Ahmadi Oil Distribution Facility, Kuwait
Industrial / Process	Oil / Gas	Nippon Steel On-Site Auditing / Risk Management
Industrial / Process	Pulp & Paper Mill	Chemical Recovery System at Pulp & Paper Mill, United States (Columbus, Mississippi)
Industrial / Process	Pulp & Paper Mill	Weyerhaeuser Pulp and Paper Mill, Training, Contract and Administration
Industrial / Process	Microchip	Sperry Micro-Chip Manufacturing & Research Facility, United States (Minnesota)
Industrial / Process	Pipelines	Sakhalin Pipeline Project, Russia
Industrial / Process	Pipelines	Bolivia Pipeline, South America (Bolivia)
Industrial / Process	Pipelines	Bombax Pipeline Project, Caribbean (Trinidad, Tobago)
Industrial / Process	Pipelines	HBJ Gas Pipeline, India
Industrial/Process	Water Plant	Central Brown County, United States (Wisconsin)
Industrial / Process	Water Plant	Pinellas County Water System Pipeline, United States (Florida)
Industrial / Process	Water Plant	Mount Hope Water Main Project, Panama
Industrial / Process	Wastewater / Environmental	Upper Rouge Tunnel, United States (Detroit, Michigan)
Industrial / Process	Wastewater/ Environmental	Passaic Valley Sewerage Commissioners Thickening Centrifuge Facility, United States (New Jersey)

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Industry	Type	Project Name
Industrial / Process	Wastewater / Environmental	Milwaukee Water Pollution Abatement Program, United States (Wisconsin)
Industrial / Process	Wastewater / Environmental	South Bay Wastewater Treatment Plant, California, United States (San Diego)
Industrial / Process	Wastewater / Environmental	Babylon Solid Waste Recovery Plant
Industrial / Process	Wastewater / Environmental	Hamilton Wastewater Treatment Plant, United States (New York)
Industrial / Process	Wastewater / Environmental	Rockland County Sewer District Treatment Plant, United States (New York)
Industrial / Process	Wastewater / Environmental	Secondary Facilities At Newark Bay Pumping Station, United States (New Jersey)
Industrial / Process	Wastewater / Environmental	Bowery Bay Wastewater Treatment Plant, United States (New York)
Industrial / Process	Wastewater / Environmental	St. Joseph Wastewater Treatment Plant, United States (Missouri)
Industrial / Process	Wastewater / Environmental	Bergen Point Wastewater Treatment Plant, United States (New York)
Industrial / Process	Wastewater / Environmental	Coney Island Water Pollution Control Project, United States (New York)
Industrial / Process	Wastewater / Environmental	Water Treatment Plant, United States (Georgia)
Industrial / Process	Wastewater / Environmental	Weyerhaeuser Fish Hatchery, United States (Medford, Oregon)
Industrial / Process	Wastewater / Environmental	Asbestos White Paper Development-Evert & Weathesby
Industrial / Process	Wastewater / Environmental	Foster Wheeler Asbestos Litigation, United States (New Jersey)
Industrial / Process	Wastewater / Environmental	Wastewater Treatment Plant, Canada (Manitoba)
Industrial / Process	Iron / Steel Manufacturing	POSVEN Hot Briquette Iron Plant, Venezuela (Puerto Ordaz)
Industrial / Process	Iron / Steel Manufacturing	Kvaerner-IPSCO Steel Plant

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Industry	Type	Project Name
Industrial / Process	Iron / Steel Manufacturing	Delta Brands Subcontract PPPL and ARP Expediting Services
Industrial / Process	Iron / Steel Manufacturing	IPSCO Mini-Mill, United States (Iowa)
Industrial / Process	Iron / Steel Manufacturing	NKK Steel Continuous Galvanizing Project, United States (Michigan)
Industrial / Process	Iron / Steel Manufacturing	Republic Steel Mill Project, United States (Ohio)
Industrial / Process	Iron / Steel Manufacturing	Union Park CSO Pump Station and Detention Facility, United States (Massachusetts)
Industrial / Process	Pharmaceutical	Pharmaceutical Production Plant, Singapore
Industrial / Process	Pharmaceutical	Bulk Pharmaceutical Plant, Singapore
Industrial / Process	Pharmaceutical	Squibb Animal Test Facility, United States (New Jersey)
Industrial / Process	Mining	Nickel-Cobalt Refinery, Western Australia
Industrial / Process	Fertilizer Plant	Petro Vietnam Fertilizer Plant, Phu My Province, Vietnam
Buildings	Educational Facilities	DeKalb County School District, United States (Georgia)
Buildings	Educational Facilities	Delgado Community College, United States (New Orleans)
Buildings	Educational Facilities	Rutgers University Records Center, United States (New Brunswick, New Jersey)
Buildings	Educational Facilities	Washoe County School District, United States (Reno, Nevada)
Buildings	Educational Facilities	Plainsboro Middle School, United States (New Jersey)
Buildings	Educational Facilities	Hunter College, United States (New York)
Buildings	Educational Facilities	York College, United States (New York)
Buildings	Educational Facilities	School Project, Indiana (Indianapolis)
Buildings	Resorts / Casinos / Hotels	Regent Las Vegas Resort, United States (Las Vegas)
Buildings	Resorts / Casinos / Hotels	Hotel / Condominium Complex, Indonesia (Jakarta)
Buildings	Resorts / Casinos / Hotels	Phoenician Hotel and Resort, Arizona (Scottsdale)
Buildings	Resorts / Casinos / Hotels	Westin Hotel, United States (Texas)

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Industry	Type	Project Name
Buildings	Resorts / Casinos / Hotels	Safety Harbor Spa, United States (Florida)
Buildings	Resorts / Casinos / Hotels	Intercontinental Hotel, United States (Texas)
Buildings	Resorts / Casinos / Hotels	Hyatt Regency Hotel, United States (Missouri)
Buildings	Apartments / Condominiums / Housing	99100 Park Towers at Hughes Center, United States (Las Vegas)
Buildings	Apartments / Condominiums / Housing	Ortley Beach Commons, United States (New Jersey)
Buildings	Apartments / Condominiums / Housing	Louisville Housing Authority Project, United States (Kentucky)
Buildings	Centers / Arenas	University of Washington Basketball Arena, United States (Washington)
Buildings	Centers / Arenas	Jacksonville Pre-Trial Detention Center, United States (Florida)
Buildings	Centers / Arenas	San Diego Convention Center, United States (San Diego, California)
Buildings	Centers / Arenas	Washington State Convention Center, United States (Washington)
Buildings	Centers / Arenas	Worcester Civic Center (Centrum), United States (Massachusetts)
Buildings	Centers / Arenas	Riverside Civic Center, United States (New York)
Buildings	Stadiums	Fresno Multipurpose Stadium, (Grizzlies Stadium) United States (California)
Buildings	Stadiums	Arizona State University, Sun Devil Stadium Expansion, United States (Arizona)
Buildings	Medical / Hospitals	Alameda-Mortenson Analysis, United States (California)
Buildings	Medical / Hospitals	Alameda County Medical Center / Highland General Hospital, United States (California)
Buildings	Medical / Hospitals	Colombo General Hospital, Sri Lanka (Colombo)
Buildings	Medical / Hospitals	Stoney Brook Hospital, United States (New York)

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Industry	Type	Project Name
Buildings	Medical / Hospitals	Madigan VA Hospital, United States (Washington)
Buildings	Medical / Hospitals	Kodiak Health Care Facility, United States (Alaska)
Buildings	Medical / Hospitals	University Medical Center, United States (Louisiana)
Buildings	Research Laboratory	TA-35 Los Alamos National Laboratory, United States (New Mexico)
Buildings	Offices	Unit Atrium One Building, United States (Ohio)
Buildings	Offices	One Summit Square Office Building, United States (Indiana)
Buildings	Offices	Equitable Tower Office Building, United States (New York)
Buildings	Offices	Loney Construction Brattleboro Projects, United States (Vermont)
Buildings	Offices	IBM Office Complex, United States (New York)
Buildings	Offices	Gold Building Parking Garage, United States (Connecticut)
Buildings	Offices	American Standard Office Building, United States (Oklahoma)
Buildings	Distribution / Storage / Warehouse	Olefins Terminal Storage Complex
Buildings	Distribution / Storage / Warehouse	TRW Record Storage Complex, United States (New Jersey)
Buildings	Distribution / Storage / Warehouse	New Jersey State Food Distribution Center, United States (New Jersey)
Buildings	Distribution / Storage / Warehouse	Trenton Record Storage Center, United States (New Jersey)
Buildings	Seminar / Training	Princeton University Summit, United States (New Jersey)
Buildings	Seminar / Training	Nexon Corporate Management, Risk Management / Progress / Project Management Training, United States.
Buildings	Seminar / Training	AES: Corporate / Project Management, Risk Management Training, United States & Canada
Buildings	Other	Parking Garage, United States (Ohio)
Environmental	Other	New Jersey Sludge Drying / Fertilizer Facility, United States (New Jersey)
Environmental	Other	Blydenburgh Landfill, United States (New York)
Environmental	Other	Transuranic Storage Area Retrieval Enclosure, United States (Idaho)

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Industry	Type	Project Name
Environmental	Other	Warren County Landfill, United States (New Jersey)
Other	Seminar / Training	University of Wisconsin-Madison Seminar, United States (Wisconsin)
Other	Seminar / Training	Fluor Corporate Risk / Claims Management, United States (California)
Other	Seminar / Training	Claims Avoidance & Management Training, United States (Arizona)
Other	Seminar / Training	Identifying, Minimizing & Quantifying Risk, England (London)
Other	Seminar / Training	Claims Seminar On Construction Issues, Canada (Manitoba)
Other	Seminar / Training	CPM Scheduling Course, United States (Pennsylvania)
Other	Seminar / Training	Claims Minimization Seminar, United States (New Hampshire)
Other	Other	Nunez Employment Discrimination Suit, United States (Texas)
Other	Other	Foster Wheeler Risk Management Corporate Advisor
Other	Other	Royal Grading Golf Course and Country Club

Nuclear Power Plants	Client
Vogtle 3 and 4 (GA)	Utility
Millstone Unit 1, 2 & 3 (CT) (outages)	Utility
Connecticut Yankee (CT)	Utility
Millstone Units 1,2 and 3 (CT)	Utility
Indian Point Unit 3 (NY)	Utility
Comanche Peak (TX)	Utility
Salem and Hope Creek (NJ)	Utility
South Texas Plant (TX) (plant, construction)	Utility
South Texas Plant (TX) (outages)	Utility
Trojan (OR)	Utility
Shoreham (NY)	Engineer/Constructor
Shoreham (NY)	Utility
Nine Mile (NY)	Engineer/Constructor
Bellefonte (AL)	Utility
Millstone 2 (CT)	Government Utility
Cooper (NE)	Utility
WPPS (WA)	Utility
Comanche Peak Units 1 and 2 (TX)	Commission
Clinton (IL)	Commission
Pilgrim 1 (MA)	Utility
Vogtle 1 and 2 (GA)	Utility
Palo Verde (AZ)	NSSS Vendor
Palo Verde (AZ)	Commission Auditor
Perry (OH)	Commission
Seabrook (NH)	New England Governors
Millstone 3 (CT)	Commission
Waterford 3 (LA)	Commission
Shoreham (NY)	Government Utility
Hanford (WA)	Equipment Vendor
Wolf Creek (KS)	Constructor
Maine Yankee (ME)	Engineer / Constructor
Seabrook Unit 1 (NH)	Commission
Seabrook Unit 1 (NH)	Utility
Seabrook Unit 2 (NH)	Commission

Galloway Non-Nuclear Power Plant Experience

Cogeneration / Combined Cycle / Fossil Fuel

- Kansas City Power and Light (KCP&L) Iatan Units 1&2 (MO)
- La Paloma Combined Cycle Power Plant (CA)
- Sacramento Municipal Utility District Cosumnes Combined Cycle Plant (CA)
- Marshall Islands Power Plant Demolition (Marshall Islands)
- Paiton Units 1 & 2 (Indonesia)
- Paiton Units 7 & 8 (Indonesia)
- JEA Northside (FL)
- Osbourne (Australia)
- Jiu Jiang Power Plant (China)
- Scherer Fossil Power Plant (GA)
- Cleveland Electric Illuminating Company Fossil Power Plants (OH)
- Jeffrey Energy Center (KS)
- Wolf Hollow Plant (TX)
- Covert Plant (MI)
- Dearborn Industrial Generation Project (MI)
- Illinois Power Company (IL)
- SMUD Cosumnes Power Plant and Pipeline Project (CA)
- Fossil Power Plant, Bulgaria

Geothermal

- Wayang Windu Geothermal Power Plant (Java)

Hydro

- Casecnan Multipurpose Project II (Philippines)
- Xiaolangdi Dam (China)
- Casecnan Mulipurpose Project (Philippines)
- Cirata II (Indonesia)
- Sulpher Creek Hydro Power Plant (CA)
- Mill to Bull Creek Tunnel (CA)

Waste To Energy

- Valorsul Waste-To-Energy Plant (Portugal)

Wind Power

- Brazos Wind Farm (TX)
- Caprock Wind Farm (NM)

Regulatory Proceeding Galloway Testimony Regarding Prudence

- South Texas Nuclear Plant, Public Utility Commission of Texas, for Central Power & Light Company
- Comanche Peak Nuclear Power Plant, Public Utility Commission of Texas, for the staff of the Texas Public Utilities Commission
- Perry Nuclear Power Plant, Public Utilities Commission of Ohio, for the staff of the Public Utilities Commission of Ohio
- Millstone Nuclear Power Plant, Unit 3, Connecticut Department of Public Utilities Control, as the management prudence auditor for the Department of Public Utility Control
- Clinton Nuclear Power Station, Illinois Commerce Commission, for the staff of the Illinois Commerce Commission
- Seabrook Nuclear Station Unit 1, New Hampshire Public Utilities Commission, for the staff of the New Hampshire Public Utilities Commission

**Utility Power Project Management and Prudence Reviews That
Did Not Involve Galloway Testimony in a Regulatory Proceeding**

- Iatan Coal Fired Units 1 and 2, for Kansas City Power & Light, in prudence hearing before both the Kansas and Missouri Public Service Commissions
- Vogtle Nuclear Station, Units 1 and 2 and 3 and 4, for Georgia Power Corporation, in prudence and certification hearings before the Georgia Public Service Commission
- South Texas Unit 1 and Unit 2, for Central Power and Light Company regarding the prudence of the project decision making and execution by Houston Lighting & Power (HC&P) regarding all forced and planned outages from 1993 - 1994
- Cooper Nuclear Station, State Court of Nebraska, for the Nebraska Public Power District [Testimony in State Court, Lincoln, NE]
- Millstone Nuclear Power Plant, Unit 1, 2 & 3, American Arbitration Association, for Northeast Utilities regarding the reasonableness and prudence of extended outages
- Millstone Nuclear Power Plant, Units 1, 2 & 3, Connecticut , regarding the reasonableness of management decision the shutdown of all units due to steam leak
- Salem and Hope Creek Nuclear Power Plants, U.S. Federal District Court, Philadelphia, for the Public Service Electric & Gas regarding the reasonableness and prudence of plant construction
- Diablo Canyon Nuclear Plant, Units 1 & 2, California Public Utilities Commission, for the Attorney General of California
- Comanche Peak Nuclear Power Plant, U.S. Federal District Court, Texas, for Texas Utilities
- Connecticut Yankee, Connecticut for Connecticut Yankee regarding the reasonableness of decommissioning activities and costs
- Maine Yankee Nuclear Plant, for Stone & Webster regarding prudent management of the decommissioning for utility report to the Maine Public Utilities Commission
- Nine Mile 2 for Stone & Webster regarding prudent management on the construction and initial outages

- Seabrook Nuclear Plant, for Northeast Utilities in U.S. Bankruptcy Court District of New Hampshire Manchester, New Hampshire regarding prudence of the decision regarding labor resources and productivity
- Shoreham Nuclear Power Plant, for the Long Island Power Authority regarding the reasonableness and prudence of the decommissioning estimate
- Shoreham Nuclear Power Plant, U.S. Federal Court, New York, for the Counsel for Suffolk County, the primary intervener before the New York Public Service Commission regarding the reasonableness and prudence of the plant construction
- Shoreham Nuclear Power Plant, New York, for Stone & Webster Corporation regarding prudent management
- Palo Verde Nuclear Power Plant, State Court, Arizona, for Combustion Engineering, the Nuclear Steam Supply System vendor
- Palo Verde Nuclear Power Plant, State Court, Colorado, for Ernst & Young, the Prudence Auditor for the Arizona Corporation Commission
- Pilgrim Nuclear Power Plant, Massachusetts, for Boston Edison regarding the reasonableness of outage management and project management
- Bellefonte Nuclear Power Plant, Alabama, for Tennessee Valley Authority
- Trojan Nuclear Power Plant, Oregon, for Portland General Electric regarding the reasonableness and prudence of the first 18 years of generation and decommissioning