



March, 2010

Greetings,

There have been several articles published and television specials aired decrying the current state of the critical infrastructure in the United States (and around the world for that matter). The defects and deficiencies will take many years to correct and cost hundreds of billions of US dollars. Yet very few of those projects ever seem to emerge from the identification and study phases aimed at correcting those deficiencies. I am often asked why nothing seems to be getting done when the need is critical and the action to be taken is obvious and understood. One answer is certainly in the staggering costs; however, another problem is that major infrastructure projects have a different time horizon than do political entities and the public at large. A major infrastructure project may take between five and ten years to plan and execute yet politicians and the public at large generally work with much shorter time horizons.

For example, here in the Pacific Northwest there are infrastructure mega-projects which have been “on the books” for a considerable amount of time among which are a defective seawall, an elevated viaduct which suffered damage during the earthquake of 2002, and a floating bridge linking Seattle to the nearby suburbs.

No-one – political or general public – disagrees that those projects must be done. No one disagrees that the failure to correct the infrastructure deficiencies in any one of those structures ultimately endangers human life and property. Yet, those projects continue to languish in the seemingly never ending “re-examination” of the plans to correct those failing structures.

The cycle is typified by what recently happened to the floating bridge noted above:

- The critical need to correct the bridge deficiencies was accepted by both the public and the politicians
- Studies as to how best to address the defects and deficiencies took ten years and appeared to have been completed;
- A plan for project execution was generally outlined and adopted (even though there were some disagreements as to the exact elements to be incorporated into the plan)
- It finally appeared that the project, imperfect as some believed it to be, had been approved and accepted for funding and implementation; then
- A new mayor was elected who wanted the plan reopened to address what he believed to be a critical issue of adding facilities to accommodate light rail on the bridge as it is rebuilt.

There is a portion of the public which supports that change. But suddenly the bridge, which must be rebuilt to protect human life and address critical transportation needs in the city of Seattle, may once

again go back to the drawing board. The question is can the bridge continue to function during yet another round of planning, review, argument and approval? Or will the next new mayor elected want to reopen the plan again to address either his own specific desires or possible public demands to reopen the bridge plan?

When a bridge known to be defective and dangerous fails, and people are killed, the first question asked is why those defects were not corrected before human life was lost. The answer is not a failure by any one person, party or entity; it is an institutional failure to recognize that time works against us when we balance politics and cost with threats to human life. Any action which delays a critical infrastructure repair risks human life and property. But will we be able to muster the political and public will to do what needs to be done? Time will tell.

Thanks,

Pat, Kris and Jack

Social Management Systems

Both Dr. Nielsen and Dr. Galloway attended the annual symposium for the Society for Social Management Systems (SSMS) held in Kochi, Japan from March 4-6, 2010. As Chair of the SSMS, Dr. Galloway opened the symposium at the Kochi University of Technology (KUT), which has been organizing the international symposiums related to Social Management Systems annually since 2005. Dr. Galloway's opening addressed the critical need for engineers and scientists to resolve some of the world's largest problems including addressing climate change and reducing the damage caused by natural disasters.

"Social Management Systems" is a new system which defines the principle of how we might be able to define the structure of socially unsolved problems in the context of infrastructure systems and engineering in order to improve our quality of life. The system also attempts to define a framework for the kind of theoretical thinking needed to create management systems which solve problems with societal evolution, as well as creating a new scientific field which provides methodologies to create these management systems.

Dr. Kris Nielsen is a member of the SSMS Scientific Committee and gave an invited lecture in March, 2009 which can be found in the [Solutions Archive](#) and was entitled "A Management System for Infrastructure Construction, Meeting the Needs of the Next Two Decades".

To read Dr. Galloway's opening address please click [here...](#)

Hollywood and Science Partner

The public may not always understand or appreciate the importance of science and engineering and the benefits that research in these areas bestows upon the quality of life. But what if Hollywood were to capture the essence of science and engineering in its film productions?

Pegasus-Global's Dr. Patricia D. Galloway, on behalf of the National Science Foundation, unveiled at the annual meeting of the American Association for the Advancement in Science a partnership between the NSF and the University of Southern California to launch a program called the "Creative Science Studio".

The program, dubbed “CS2” will bring NSF-supported researchers together with entertainment scholars and show business professionals.

The program will have as its goal the dissemination of a broad range of science and scientific concepts to the public. Participants in the panel chaired by Dr. Galloway, included actor and director Ron Howard, USC School of Cinematic Arts Dean Elizabeth M. Daley, “Contact” science adviser Kip Thorne and Kalpen Modi, Associate Director of the White House Office of Public Engagement.

The partnership was also featured as part of a CNN Tech Report article called “Do TV and Movies Get Science Right?” Even the venerable Hollywood Reporter kicked in with a short article on the partnership.

To view the press release please click [here...](#)

To view the Hollywood Reporter article, please click [here...](#)

To read the CNN Tech article please click [here...](#)

Discovery.com

Science is a wonderful adventure and the adventure is just what you’ll get when you see “bigger than life”! Dr. Kris Nielsen and Dr. Patricia D. Galloway attended the premiere Discovery Channel screening of the first of an 11 part series called “Life”. The series, which explores the adaptability and diversity of animal behavior in its struggle to survive, begins on the Discovery Channel, March 21, 2010.

To read more, please click [here...](#)

Dr. Galloway is also part of an extensive team of professionals chosen to be part the Curiosity Project. The Curiosity Project celebrates the Discovery Channel's 25th year by presenting the “great questions that puzzle us as humans” and offering the perspectives of scientists, engineers and humanities teachers as well as professionals from all walks of life. The programming will be called “Curiosity – The Questions of Life” and will premiere in 2011 on all Discovery Network channels worldwide, presenting 60 episodes over a period of 5 years. Additional on-line material will supplement and augment the series.

To view a short video (and see Dr. Galloway's cameo appearance) please click [here...](#)

National Science Foundation Celebrates 60 Years

On it's 60th Anniversary, the future of the National Science Foundation was the topic of discussion, at the NSF's symposium held on February 20th in San Diego. NSF vice chair Dr. Galloway of Pegasus-Global opened the symposium and led a discussion of the topic. The current NSF Director and four previous NSF Directors presented their perspectives and advice on what they believe is required for the NSF to maintain its global leadership in science and engineering while drawing on their previous experiences at NSF and discussed the future challenges that are likely to occur. This historic event highlighted a day of discussion concerning the United States' leadership in scientific research and innovation over the last 60 years and its relevance in today’s rapidly evolving, highly competitive world.

For more information, please click [here...](#)

Industry Sectors

Infrastructure

ASCE's "Report Card for America's Infrastructure" seeks to inform the public and policymakers about the condition of the nation's infrastructure and how best to improve it. Americans owe much of their economic prosperity, public safety, and high quality of life to a civic infrastructure that serves them everyday.

The Report Card points out serious needs facing the nation's infrastructure including the need for focused and visionary leadership and adequate funding. The Key Solutions offered by ASCE are ambitious and will not be achieved overnight, but Americans are capable of real and positive change. ASCE urges all those who want to continue our tradition of a strong and prosperous nation to begin by maintaining and improving the infrastructure that makes us great.

For More information click [here...](#)

Power

A NEW DAY FOR PRUDENCE - Pre-approval processes in Nuclear Power Plant construction demand a new approach to managing risk and costs. An article published in *Public Utilities Fortnightly* – written by Dr. Kris Nielsen, Dr. Patricia D. Galloway and Mr. Chuck Whitney, Senior Vice President and General Counsel of Oglethorpe Power - provides insights into the new twists prudence is taking in today's nuclear environment where utilities may no longer be able to recover their investment over the productive lifetime of the plants they build.

To read the article please click [here...](#)

Pegasus-Global This Month

In his monthly blog, "A View From the Boardroom" , Dr. Nielsen discusses the need for today's Boards to consider the lessons of the past in terms of the holistic relationships between those lessons and today's challenges. To read Dr. Nielsen's blog, click [here...](#)

International Center for Dispute Resolution (ICDR) Miami Conference March 22, 2010

Dr. Galloway will be moderating a panel titled "Regional Considerations for International Construction Projects". The panel, which will include many international participants, will discuss the cultural and legal issues surrounding the inclusion of Alternative Dispute Resolution (ADR) provisions in international construction project contracts. The panel will visit such topics as seating international construction arbitration panels within regions. The involvement of State parties, BIT's and the language and status of the enforcement of international arbitration awards will also be addressed. For more details and registration, please click [here...](#)

Pegasus-Global People

Howard L. Sobel, P.E.

Mr. Sobel has been working with the Pegasus-Global team for over 25 years on a variety of engagements including numerous nuclear power plant performance and prudence audits. Mr. Sobel has more than 35 years of experience in the power generation and construction industries involving design, engineering, change orders, specification preparation, bid evaluation, procurement, construction, start-up, operations and maintenance using different contract forms including EPC and design-build. He is experienced in power plant construction, operation and FERC / state regulatory agencies. Projects have included new construction and renovations, power plants (nuclear, coal, co-generation, combined-cycle, fluidized bed), industrial plants, utility electrical systems and schools. He finds the Pegasus-Global consulting projects that are often on the cutting edge of technology exciting to work on and that they provide a high degree of professional accomplishment.

Mr. Sobel says that every engagement has the intellectual challenge of distilling complex technical issues into digestible and understandable facts to serve the client and to address the problems they face.

He remembers being particularly inspired by Hans Bethe, a Nobel Laureate and Professor at Cornell University, as a remarkable example of how a man of Professor Bethe's brilliance could convey knowledge and enthusiasm to one of his students, one Howard Sobel. Professor Bethe was extremely influential in Howard's decision to pursue graduate studies in nuclear engineering.

One of his most interesting jobs? Negotiating with the Admirals of the Russian Federation Navy to address the issues involved in their commitment to decommission Russian Nuclear subs as required by the SALT Treaty between the United States and the Soviet Union.

To read Mr. Sobel's resume please click [here...](#)