

Panel: Building Public Confidence in Nuclear Safety (Grand Ballroom III)

Date/Time: Tuesday, February 19, 2013 /12:30-13:45

Talking Points for: Dae Chung, Principal Deputy Chief for Nuclear Safety and Technical, U.S. Department of Energy/Office of Health, Safety and Security

Over the past 10 years, individual nations and the World have responded to several significant man-made or natural events. In responding to these often catastrophic events, we have routinely demonstrated our creativity, resilience and resolve. But, our response to these events has also challenged our technological capability and competence. The events and our responses have humbled us and are a constant reminder that we need to guard against “technological hubris” and complacency. Ensuring the safety of technology and effectively engaging stakeholders in the decision-making process is foundational for public trust and confidence.

Catastrophic or near catastrophic events over the past 10 years suggest that there are often multiple opportunities to prevent or minimize the catastrophe and that safety culture plays a key role

In the United States, there have been three events over the past 10 years or so that are worth noting. On April 10, 2010, the Deepwater Horizon oil drilling rig exploded. Eleven crew members died, and others were seriously injured, as fire engulfed and ultimately destroyed the rig. On February 1, 2003, Space Shuttle Columbia was destroyed in a disaster that claimed the lives of all seven of its crew. Finally, on March 6, 2002, at the Davis Besse nuclear power plant (NPP), a hole in the reactor pressure vessel (RPV) head, about the size a football, was discovered. The remaining thickness of the RPV head in the wastage area was found to be approximately 3/8 inch. This thickness consisted of the thickness of the stainless steel cladding on the inside surface of the RPV head. The simple fact that no one died and there was no release of radioactivity should be of little comfort. The investigation or accident analysis reports for each of these events – or near events --showed a common element: poor safety culture

The Report to the President from the National Commission on the BP Deepwater Horizon (January 2011) concluded that the explosive loss of the well could have been prevented and “[t]he immediate causes of the well blowout can be traced to a series of identifiable mistakes ...that reveal such systematic failures in risk management that they place in doubt the safety culture of the entire industry.” The Report of the Columbia Accident Investigation Board noted “[i]t is our view that complex systems almost always fail in complex ways, and we believe it would be wrong to reduce the complexities and weaknesses associated with these systems to some simple explanation...The Shuttle Program’s complex structure erected barriers to effective communication and its safety culture no longer asks enough hard questions about risk.” The operator for the Davis Besse NPP concluded “that, overtime, the plant had become complacent and in many areas a minimum compliance standard existed in management. The plant did not use industry experience effectively and in many areas

*** The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.**

was isolated from the industry. There was a lack of sensitivity to nuclear safety issues and the focus was to justify existing conditions.”

The culture of safety must be embraced by all levels of an organization. Actions and decisions must demonstrate, to both internal stakeholders and the public, that safety is highly valued.

Arguably, all the previously discussed events could have been prevented by an effective organizational safety culture. An effective organizational safety culture promotes trust and confidence within the organization and with the public and other external stakeholders. The use of nuclear materials engenders additional burden for building and promoting public trust and confidence. According to the Institute for Nuclear Power Operations (INPO), each nuclear station, because of the special characteristics and unique hazards of the technology—radioactive byproducts, concentration of energy in the reactor core, and decay heat—needs a strong safety culture. Nuclear safety is a collective responsibility. No one in the organization is exempt from the obligation to ensure safety first. The figure below, developed from the shared INPO and the World Association of Nuclear Operators (WANO) Principles for a Strong Nuclear Safety Culture, depicts the interrelationship and necessity for all the elements to create the culture of safety. Safety culture is an organizational and individual responsibility and an effective safety culture will promote public trust and confidence. Moreover, an effective safety culture is essential for both internal and external trust and confidence to endure.



Once lost, the effort to rebuild public confidence and trust is a slow and difficult process—

* The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.

transparency, independence and accountability, and stakeholder communication and engagement are essential.

During his concluding statement to the IAEA Ministerial Conference on Nuclear Safety, IAEA Director General Yukiya Amano noted “[t]he primary goal is to make nuclear power plants as safe as humanly possible, as quickly as possible. But it is also important to rebuild long-term public confidence in the safety of nuclear power. For that, tangible outcomes are needed, and we must maintain our sense of urgency. We must also be fully transparent.” Transparency is an essential part of an effective safety culture and a key element to regain public confidence and trust.

According to the report: *World Energy Perspective: Nuclear Energy One Year After Fukushima* by the World Energy Council measures that should result in rebuilding and regaining public trust in nuclear power include building on current initiatives and existing institutions and structures such as the IAEA, the International Nuclear Agency, in coordination with the initiatives of operators’ bodies like WANO, national regulator’s coordinator like WENRA, INRA, the international group of experts at INSAG. The WEC also conducted a response survey covering member countries with nuclear power facilities. The survey showed that in most countries that have nuclear power installations there is both greater willingness to strengthen national nuclear authority in light of Fukushima, and strong agreement that there is the need to improve public understanding and acceptance of nuclear technology, and its costs, benefits, and risks. Media affects the public discourse of nuclear energy the most. Therefore, according to the report “the most pressing barrier for the future acceptance and development of nuclear power is understood to be public perception, closely followed by a lack of policy.”

Risk communication provides the essential links between risk analysis, risk management, and the public perception and understanding. The U.S. Nuclear Regulatory Commission, for example, relies on successful risk communication to complete its public health and safety mission and integrates, in a meaningful manner, values and assumptions, technical information, and decisions in its communications. Effective risk communication helps to reconcile differing perceptions of risks and gain an appreciation of stakeholders’ points of view.

Communication must be “plain language” so that it will be clear and easily understood by stakeholders not familiar with the technology. Often, it is not sufficient to just make information available. Effective engagement of all stakeholders is essential. Stakeholders must feel part of process and that their concerns are understood, considered and appropriately addressed. Effective stakeholder engagement is a deliberate, often time consuming effort. But it has repeatedly been shown to provide a return on investment both in terms of better public policy and in higher levels of public trust and confidence. Some tools for effective stakeholder engagement include 1) Citizen Advisory Boards (quarterly meetings with senior organization leadership) and 2) active participation in the safety decision-making process –

*** The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.**

e.g., rulemaking, establishing new requirements.

The widespread and instantaneous nature of new information can be effective in public outreach and helping to build public confidence or in instantaneously eroding trust.

In 1986, Dr. Hans Blix, former Director General of the IAEA once stated, “[t]he media will not change, however, and we can only try to influence their reporting by, ourselves, contributing reliable data and responsible analysis. Indeed, we have a duty to media and to society to do so, since we often have these data and often can make such analysis.” Over 25 years later, Dr. Blix’s statement is now only half true. The media has changed, but our duty to the media and society has not.

ADM Thad Allen who led the Hurricane Katrina recovery efforts and the Deepwater Horizon Response once noted --“There’s never going to be a major event in this country again without public participation” ... “There’s a growing discontinuity between what the American public expects the government to do and what the government can do.” This is true for any country today not just the US. In order to maintain public confidence and trust we need to be aware of this discontinuity and address it in our public outreach efforts.

We need to be better able to respond more quickly while ensuring the reliability and accuracy of the information we provide. Providing wrong information in a timely fashion is worse than providing no information. It is a delicate balance, in the aftermath of an accident to maintain public trust and confidence, when information –in the fog of war – may not be accurate. The ability to place into proper context all the information into a coherent accurate statement is challenging...but necessary. Misinformation or a lack of information has the potential to instantaneously erode trust.

At some critical point in the process, trust will be more about relationships than information. Today, building relationships has to consider and use all the tools and techniques available including social networking, use of the internet/webpage, and other tools to connect people and allow participation in the process (e.g., electronic meetings). If we do not embrace the new reality of the media, the 24 hour news cycle, the implications (positive and negative) of social networking, we will not be successful in building public confidence. As we embrace the new media, we still need to maintain the familiar cornerstones of public outreach that have been effective. The low-tech, old-fashioned personal touch provided when an organization is not just a business...it is part of the community and accountable to the community. It is a community member that is open, transparent and encourages interaction and learning through visitor education centers or routine tours of facilities.

Whereas, we have tended to rely on our convincing details about how we rely on strategies to prevent an accident (how safe the technology is – the potential “technological hubris”), we now need to broaden our message to explain what we will do in the event of an accident. Proper emergency planning involving all stakeholders, in both public outreach and in practicing emergency preparedness, will improve public trust and confidence and

*** The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.**

demonstrate the organization's continued principal value of safety. There is enormous equity (goodwill) that can be established by transparency, effective risk communication and openness that will help provide a foundation for public trust during an emergency or accident. Build trust before it is tested.

Simple and Practical Conclusions

Nuclear safety is a public trust. Public confidence is a public trust. These are not optional byproducts of our operations or businesses. They are foundational and must be woven into our safety culture fabric. There are 4 simple and straight-forward concepts that I believe are essential for rebuilding and maintaining public trust. They are:

- 1) Be a learning organization - learn from the lessons and best practices of others
- 2) Safety culture must be embraced at all levels of an organization – in actions and in words A visible and vigorous Safety Culture is necessary for public trust and confidence
- 3) Work every day to keep the public trust through transparency, accountability, and effective stakeholder engagement
- 4) Embrace the new media reality and establish meaningful and genuine relationships. Build trust before it will be tested.

* The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.