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Crisis Management Failures in Japan's Reactors and the BP Spill

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A potentially catastrophic technological problem, an incomplete crisis response plan, misleading early information, divided private and public authority, ineffective initial actions.

This could describe the current situation at the Fukushima Daiichi nuclear power plant and its six reactors. But, it also describes what happened after the April 20, 2010 explosion of the Deepwater Horizon oil rig in the Gulf of Mexico.

These two unprecedented events are stark reminders that effective crisis management involving complex science and technology is wholly dependent on well-thought-out — and actively practiced — crisis response plans. Of course, such plans will have to adapt to actual events, but without a robust plan, "seat of the pants" crisis management won't work. This is a lesson of vital importance to business and government in a host of technological activities that are potentially dangerous but economically significant. It is of even greater importance if a major act of terrorism involving nuclear, chemical, biological or cyber weapons occurs, either in private sector facilities or public spaces that impact private employers.

The fact that many of the problems relating to crisis response and crisis management recurred in Japan, with the Gulf spill still freshly in mind, shows how easy it is to talk the talk on these matters of crucial importance, and how difficult to actually execute in the turbulence of low probability but high consequence events.

Although the Japanese nuclear event is not yet a week old and information is impressionistic and fragmentary, it bears a striking resemblance in a number of dimensions to the Gulf spill which occurred almost a year ago and has since been carefully analyzed (see, for example, the Report of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, January 11, 2011):

Response Plan. Neither the Gulf spill nor the problems at the Japan nuclear plants were unthinkable. The possibility of a well blow-out was explicitly addressed by systems, processes and technology. Planning for the possibility of a severe earthquake

and a subsequent tsunami were part of Japanese reliance on nuclear power. Yet, neither BP and the U.S. government nor Tokyo Electric Power Company (TEPCO) and the Japanese government had response plans which addressed the sequence of events that, though remote, were arguably foreseeable in environments where dangerous technology was located and which, in particular, addressed the additional issues outlined below.

Public or Private Responsibility? The U.S. government initially left many dimensions of crisis management and response to BP. But, the Gulf spill was a national issue, which required governmental direction, responsibility and accountability. The BP Commission properly criticized the federal government for failing to assume leadership soon enough or to act effectively in coordinating the private sector and public sector (federal, state and local) actors. In Japan, although the government has taken the lead on many aspects of the post-earthquake/tsunami crisis, there has been confusion about who is in charge at the nuclear plants. Where is the central government? Where is the nuclear regulator? As Michiyo Nakamoto pointed out in the Financial Times, the government initially left many decisions to TEPCO (before forming a "joint" task force) , and then criticized the utility even though this is now a national emergency requiring the exercise of national authority.

Confusing Information. A host of factual questions were raised by Gulf Spill: How much oil was flowing? How could the flow be stopped? Where was the oil going (surface/sub-surface)? How could it be contained or removed? How could damage to environment/people/property be eliminated or mitigated? But for a significant period of time, responses from the company and the government were confusing. The U.S. government needed a central authority which used expert working groups, and which made clear to the public what was known, what was unknown, what process was in place for improving knowledge, and when there would be regular updates on those issues. A similar set of problems bedevils Japan. There are critical questions about condition of the reactors; possible physical and chemical reactions in the reactor areas; actions being taken to reduce those risks; radiation releases; health implications. Yet there has been a welter of voices from the government and industry which has left Japanese citizens — and the world — confused. Again, a single central authority needs to have seized control of the information flow and been as candid and explicit as possible about what is known, what isn't known, and how information gaps are being filled.

Decision-Making Processes. As noted, there was substantial confusion for weeks after the Gulf spill about whether the company or different parts of government were making decisions. The decision-making processes on a host of crisis response issues (see preceding paragraph) were not set out clearly for the public — including

comparison of options — and led to a perception of drift and lack of direction during a major national catastrophe. A similar concern appears to apply in Japan, where opaqueness prevails about who is making decisions about what options, with what parties at the table, and with which other parties advising (from around the world). This, too, contributes to the growing sense that the public and private authorities do not have the situation in hand (and, in fact, may be losing control).

Implementation and Resources. In the Gulf, there were also serious issues about which private and public sector actors would implement which decisions — and about what resources were necessary. Indeed, just the lack of resource preparedness increased the severity of problems of containment and damage mitigation. In Japan, it is very hard to tell at the moment who is responsible for carrying out which decisions at the nuclear plants as TEPCO has been shifting employees around the plant (leaving, at the moment, 50 heroic technicians to deal with four reactors in stress and two more at risk at the Fukushima Daiichi plant) — and it is far from clear if regulatory experts (from inside or outside Japan) are on or near the site at all.

These are issues which every company with potentially catastrophic processes, products, or plants needs to answer with a special team of "worst case" analysts. Such analysis then has to be transformed into a response plan. Where the issue involves government — and in most cases it will — the company needs to coordinate its planning with federal, state and local authorities. After 9/11, many companies analyzed these issues with respect to terrorist acts at their facilities or terrorist acts which, if not directed at the company, could still have significant impact on people, facilities, information and supply chain.

Yet, many experts in crisis response and crisis management would say that without practice, without simulations, these response plans merely gather dust and are not effective when the hundred-year event occurs. In the military, war games can be a vital tool for learning how to respond to crisis situations. We need a "war game" mentality in the private sector to address the severe conceptual and operational problems in crisis response and crisis management which the Gulf Spill and the Japan nuclear events so starkly illustrate.

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