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## SUBCOMMITTEE ON GAS AND ELECTRIC INFRASTRUCTURE SAFETY

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### **IMPROVING SAFETY COMMUNICATION AMONG CITIES, UTILITIES, AND THE CALIFORNIA PUBLIC UTILITIES COMMISSION**

The purpose of this hearing is to examine the necessary elements of communication about safety—and the perils of doing it poorly—among cities, utilities, and their regulator, the California Public Utilities Commission (CPUC). Communication of this sort—often described under the mantle of “risk communication,” has gained considerable attention from the academic and practitioner community, as over the last half century the risks that society faces—nuclear radiation, endocrine disruptors, climate change—are more technical than those in the past, more difficult to assess, and therefore understandable to a smaller and smaller segment of the population (“experts”). At the same time, many communities who feel that they bear the risks have demanded more and more voice in the decision-making that affects them. Making matters more difficult, trust in government has dropped significantly in that time period.

The hearing uses the recent example of the City of San Carlos’s concern about the safety of Pacific Gas and Electric Company’s (PG&E’s) gas transmission Line 147 as a case study.

On October 4, 2013 the City of San Carlos, situated on the San Francisco Peninsula roughly halfway between San Francisco and San Jose, asked San Mateo Superior Court and was granted a temporary injunction against PG&E’s continued operation of Line 147, a high-pressure natural gas transmission pipe that runs through the city. This was the culmination of a series of events

involving questionably-effective communication between PG&E, the CPUC, and the City of San Carlos about the safety of the pipe.

After the September 9, 2010 natural gas explosion in San Bruno, which left eight dead and destroyed 38 homes in the Crestmoor neighborhood, the CPUC ordered PG&E to reduce the operating pressure on a number of transmission lines to ensure a sufficient margin of safety until such time as PG&E was able to demonstrate that it could operate the pipelines safely. Investigation by the National Transportation Safety Board (NTSB) had found the pipe segment that had failed in San Bruno had failed along a seam weld, even though PG&E had thought the pipe to be seamless. NTSB recommended that PG&E search for “traceable, verifiable, and complete” records to demonstrate that it knew the correct maximum safe operating pressure at which to run all of its transmission pipelines, and for each pipe in which the utility could not find those records, to perform a pressure test with water to make sure that any defects could be rooted out.

Seeking the ability to raise the pressure in Line 147 and Line 101 (running roughly along Highway 101 from Milpitas to San Francisco) in advance of the winter season, PG&E provided the CPUC the required “traceable, verifiable, and complete” records for the lines in late 2011 along with pressure test records for pipe segments that did not have such records. On December 1, 2011, the CPUC commissioners unanimously approved PG&E’s application, satisfied that PG&E’s filing demonstrated that it could safely operate the pipes at pre-San Bruno explosion pressures.

On July 3, 2013, PG&E filed with the CPUC an “errata,” or list of errors, in the testimony it had provided in 2011, stating that new information uncovered in late 2012 demonstrated that some pipe sections on Line 147 had welds historically considered of lower quality than the welds it had thought were on the pipes. PG&E stated that this new information required a reduction in the line’s maximum safe operating pressure.

In announcing this at the August 15<sup>th</sup> business meeting, Commissioner Florio stated,

*“There were also some issues around how PG&E brought this to our attention by attempting to file an errata to the testimony that they had presented two years ago and that we had already acted on. Fortunately our docket office caught this July 3<sup>rd</sup> filing and said ‘wait a minute—you can’t file errata to testimony two years after the Commission acted on it.’”*

The CPUC held two half-day hearings on September 6<sup>th</sup>—one on the safety implications of the new information and another on whether or not PG&E had been insufficiently forthcoming in presenting this new information. In the proceeding, PG&E filed testimony offering further explanation, provided a metallurgical report on several feet of the pipe segment in question (having replaced the section in August), and stated that it had informally notified staff in the CPUC’s Safety and Enforcement Division in February of the new information.

During the discovery period, parties to the gas safety rulemaking obtained emails from PG&E, in one of which, dating from late 2012, the engineer examining a pipe section in San Carlos expressed concern over its condition, asking “are we sitting on a San Bruno situation,” and questioning whether a hydrostatic testing can sometimes cause a safety situation. PG&E presented this email to officials from the City of San Carlos at the end of September/early October, and after a few discussions with PG&E, San Carlos called a state of emergency, opened up an emergency operations center, and asked for and received the temporary injunction from San Mateo Superior Court. There had been no contact between San Carlos and the CPUC until the city contacted the CPUC to inform it of the injunction request shortly before it was filed.

### **“Connected to You by More than Power Lines”**

Utilities, since at least the time of the formation of public utilities commissions in the 1910’s, have engaged customers on many levels communication with customers, valuing not only their direct relationship with their customers but the freedom to operate that accompanied a successful public relations strategy (Hirsh 2001). Nonetheless, utilities have had varying levels of success in communicating with their customers and communities in times of crisis. Pepco, an electric utility that serves Washington, DC and close to 1 million customers in Maryland, faced intense public criticism after a response to Hurricane Isabel in 2003 for what its customers perceived as an unacceptably slow response, despite the fact that its response times were not significantly different than those of utilities in similar situations. The utility, whose motto was “we’re connected to you by more than power lines,” had failed to provide prompt and reliable estimates of when power would be restored, and it lost significant credibility after claiming that power was fully restored when in fact many customers were still in the dark. Pepco found itself facing public hearings before the D.C. City Council (Davenport 2003).

More recently, New York State’s Moreland Commission examined the response of the state’s utilities to Hurricane Sandy (Moreland 2013). Two out of the four major criticisms regarded communication: an inability to communicate estimated times for power restoration to customers, and poor coordination with local governments and public officials.\*

### **The Need for Effective Communication of Risks**

Peter Sandman (1993) describes the evolution of attitudes about how technical experts have dealt with communicating risks to the public. Traditionally, the managers of risk had been wary of public involvement, with an attitude Sandman describes as “ignore people if you can, mislead them if you must, lie to them in the extremis, but for heaven’s sake don’t level with them because they will screw it up.” This approach has largely been replaced because of its

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\* Notable in the report is that it mentions only two out-of-state utilities who participated in the Hurricane Sandy mutual assistance process: San Diego Gas and Electric Company and PG&E.

ineffectiveness. A great improvement but nonetheless misleading approach, according to Sandman, is to assume that if the public only understood as the technical experts do, then the public would agree with the experts. Such a philosophy leads risk managers to feel that if only they could express themselves better, conflict would be avoided. Current models of risk communication accept as a premise that the lay, or public, concern is equally valid as a technical assessment of risk, and that a two-way dialogue is required to come to a common understanding and, when possible, an optimal outcome.

The National Research Council (NRC) has produced a number of reports on how to avoid unnecessary conflict between technical experts and the non-technical public who may bear the risk of a public decision. These reports have concluded that, while effective communication may not always make a situation better, poor communication invariably makes it worse.

Risk depends on where one sits. The pipeline industry, whether natural gas or oil, states that pipelines are by far safer than other means of transport, such as over roads or over rail. Statistics show that, depending how one calculates the risk, gas and petroleum transport via pipeline is two or more times safer than transport by rail and tens to one hundred times safer than transport via truck. Such statistics do not consider, however, the difference in risk among those who live 20, 200, or 2000 or more feet from a pipeline or rail tracks. In making decisions about risk, one often chooses not between options of more or less risk or benefit, but on whom that risk or benefit is placed. Risk cannot therefore be confined to a technical determination or resolved purely with effective communication. When questions of value are applicable, they must be weighed in a political process. As NRC states,

*“a problem formulation that that appears to substitute technical analysis for political debate, or to disenfranchise people who lack technical training, or to treat technical analysis as more important to decision making than the clash of values and interests is bound to elicit resentment from a democratic citizenry.” (NRC 1989)*

Important to note is that effective risk communication does not always lead to consensus conclusions, but should raise the level of understanding of the relevant issues different parties and serve to maintain or grow the trust between parties to preserve the effectiveness of future communication efforts.

### **Roadblocks to Effective Communication**

Legal constraints can impede effective communication. The public airing of safety information can give ammunition to opposing litigants or potential litigants. PG&E, for example, is facing litigation in multiple arenas for actions (or inactions) that had led up to the explosion in San Bruno, including before the CPUC and in civil court, and the utility is under investigation by the U.S. Attorney for potential criminal violations. Legal advice which usually calls for divulging as little information as possible tends to be antithetical to effective communication.

Lack of mutual trust can likewise prevent mutual understanding between parties. As NRC finds,

*“The perceived accuracy of a message is hampered by the following: real or perceived advocacy of a position not consistent with a careful assessment of the facts; reputation for deceit, misrepresentation, or coercion; previous statements or positions that do not support the current message; self-serving framing of messages; contradictory messages from other sources; and actual or perceived professional incompetence or impropriety.”*

The process of communication can help repair or aggravate a trust gap. The first step to effective communication is for all parties to treat each other as legitimate participants of a two-way exchange. The format the two-way exchange is important. Though a common means of public participation, the formal hearing process is perhaps the least effective venue for interaction, especially between parties who already harbor some hostility toward each other. Formal hearings 1) exacerbate an “us versus them” mentality, 2) are not conducive to a mutual discussion of how information will be used in determining an outcome, and 3) foster one-way communication (Lundgren and McMakin 2013). In fact, some evidence suggests that formal hearings increase participants’ perceptions of risk and decrease the credibility of the organization conducting the hearing (McComas and Scherer 1998).

Another means of bridging a trust gap can be through the use of independent review of the evidence. The independent reviewer must have pre-established the trust and respect of the differing parties for such an approach to work.

### **Denial, Silence, Acceptance: Governmental Responses to Mad Cow Disease in the 1990’s**

Lessons on effective risk communication can be found throughout public health, safety, and environmental literature. In conclusion, this section demonstrates risk communication of varying effectiveness in the public health context.

Leiss and Powell discuss the differing approaches that countries took in interacting with their citizens on the risks of mad cow disease in the mid-1990’s. For nearly a decade after the appearance in British cattle of bovine spongiform encephalopathy (BSE)—colloquially referred to as “mad cow disease”—the British government maintained that there was no realistic risk that the consumption of beef from afflicted cattle could lead to a similar disease in humans. The human equivalent of BSE is called Creutzfeldt-Jakob disease (CJD), and normally occurs in one person per million per year. Once symptoms appear, the victim rapidly degenerates, though the disease can have an incubation time of up to thirty years, and it usually affects only people of advanced age. Exceptions have been found in Papua New Guinea, where some tribes handled and ate the brains of their dead in mourning rituals, and in the injection of human growth hormone prepared from the pituitary glands of infected cadavers (before synthetic versions were available).

As evidence piled up that an inter-species transfer could occur—first with the discovery in 1990 that disease could pass from beef to cats through cat food, then with evidence that a handful of young Britons were dying of the disease—the British Ministry of Agriculture maintained there was no threat. In 1990 the Agriculture Minister and his four year-old daughter ate a hamburger in front of television cameras to reassure the public. In 1995, after one of the United Kingdom’s leading brain disease experts stated on BBC Radio that he would not eat a hamburger “under any circumstances,” the government fought back by insisting that there was “no conceivable risk” of infection through eating beef.

The public was not convinced by the government’s denial of the validity of public concern. The co-director of the U.K.’s watchdog Food Commission described the situation:

*“The Government seems to be more interested in propping up the beef industry rather than admitting there may be a risk, however small it may be. I think what is happening is that every time a minister gets up and says beef is safe, there is absolutely no danger, there is absolutely no risk, a whole lot more people more people stop buying beef because they don’t trust the Government.”*

In the ten years preceding the Christmas of 1995 beef consumption in the U.K. had dropped 20 percent, and thousands of schools had taken beef off the menu. When evidence of a possible link was presented to the British government in March of 1996, the government had no choice but to admit there may be a risk and, in doing so, lost whatever credibility on the subject that it may have had.

In North America, the United States and Canada had different reactions. Citizenry in both countries called for the ban of feeding animal parts to cattle (natural vegetarians), as that was a well-established route of transmission of the disease within cattle. The U.S. Food and Drug Administration, threatened with lawsuits, responded immediately, asking for ten to fourteen days to consider a ban. The next day, the US Department of Agriculture announced that it was expediting regulations for such a ban. Industry associations issued statements in support of the agencies and instituted a voluntary prohibition on the practice.

In Canada, however, the agricultural agency announced that it was consulting with industry and would likely make an announcement the same day (which never came). In the face of government inaction, the Canadian Cattlemen’s Association began a quiet campaign to dismiss the matter and state that BSE was a British, not Canadian, concern. Canadian officials would downplay the risk, but eventually conform to the U.S.

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