

# COMMUNICATING WITH THE PUBLIC DURING A NUCLEAR CRISIS

FRANCIS X. ("CHIP") CAMERON, THE ZERO GRAVITY  
GROUP

# OVERVIEW

**Overarching considerations**

**The challenges of effective communication**

**The events – TMI, Chernobyl, Fukushima**

**What do the events tell us about effective communication?**

**What aids effective communication?**

# OVERARCHING POINTS

**Poor planning and preparation for emergencies has a direct link to poor public communication**

**Good communication with the public is an essential part of effective emergency planning**

**The elephant in the room – adequate safety measures to prevent or mitigate accidents, e.g., filtered hardened vents, the latest controversy**

# OVERARCHING POINTS

**The “costs” of poor communication with the public can be high—**

**public distrust of the regulator, company look to others for information**

**do the experts know enough to protect the public from nuclear catastrophe?**

**implications for energy choices**



# CHALLENGES

**Accidents and unexpected events will happen**

**They happen with little or no warning**

**Need for quick decisions with limited information**

**May not know what is going on or how to fix it**

**Rapidly changing circumstances and information,  
hour to hour, day to day**

**Difficulty of explaining complex technical issues**

**The instinct to not want to scare people and avoid  
“panic”**

# CHALLENGES

**Misinformation abounds – and the new social media allows it to spread quickly**

**Exhaustion and anxiety for the decision makers and staff**

**No previous explanation to the public on risks, worst case scenarios – the event comes as a surprise**

**Murphy's Law applies – if anything can go wrong, it will go wrong**

**Confusion reigns!**

# HUMILITY

## NRC Incident Response Center pre TMI



# FUKUSHIMA

**“A blackout of experts” Kenichi Shimomura**

**Communication breakdown – difficult to communicate with the plant – power grid down, backup generators obliterated**

**Government’s emergency headquarters in the basement of PM Kan’s residence – no cellular capability**

# FUKUSHIMA

**Plant ops manual current but lacked any measures on how to cope with a breakdown in normal communications – it assumed no loss of electricity**

**Uncertainty about decision making at all levels – government, TEPCO executives, the plant staff**

# FUKUSHIMA

**Five days into the crisis, emergency response taken over by PM Kan and an ad hoc group of politicians, advisors and the Chairman of NSC (Nuclear Safety Commission)**

**Experts in the group seemed incapable of providing any guidance to Kan**

**Kan did not delegate decision-making and there was no questioning of his decisions**

# FUKUSHIMA

**Government and TEPCO conveyed information in “dribs and drabs,” hoping to reassure the public**

**Initial evacuation zone was 3 km but kept expanding without any prior warning that expansion might be necessary or why**

**Little information provided on possible risks, e.g., rad levels in milk, vegetables**

# CHERNOBYL

**“A misfortune has befallen us”**

**M. Gorbachev**

**No guidelines on what to do in this type of emergency**

**Hazards downplayed from President Gorbachev on down – an “insignificant accident”, “quit scaring people”**



# CHERNOBYL

**No warning to people close by in Pripyat to stay indoors – but then evacuated 11 hours after the accident**

**But no broad public announcement**

**The radioactive plume broadcast the truth**

**18 days after the accident Gorbachev on Moscow TV –”A misfortune has befallen us...but the worst is over”**

# TMI

**“Confusion, contradictions, and questions clouded the atmosphere like atomic particles”**

**W. Cronkite, March 30, 1979**

**Experts were confused in the face of a crisis they never expected – they had little idea of what was happening and less of what would happen next**

# TMI

**March 28, 1979, Wednesday - slowly leaking radiation**

**Thursday - crisis past; rad releases low**

**Friday - all hell broke loose**

**two more uncontrolled bursts of radiation**

**evacuation of pregnant women, children**

**mysterious bubble that some NRC officials thought could cause a meltdown**

# TMI

**“Sources seem to speak a foreign language...if asked a straight question about how much radiation was escaping, they answered with mumbo jumbo about millirems, manrems, rads, and picocuries**

**once you figured out what they were saying, another source was saying something different” Philadelphia *Bulletin***

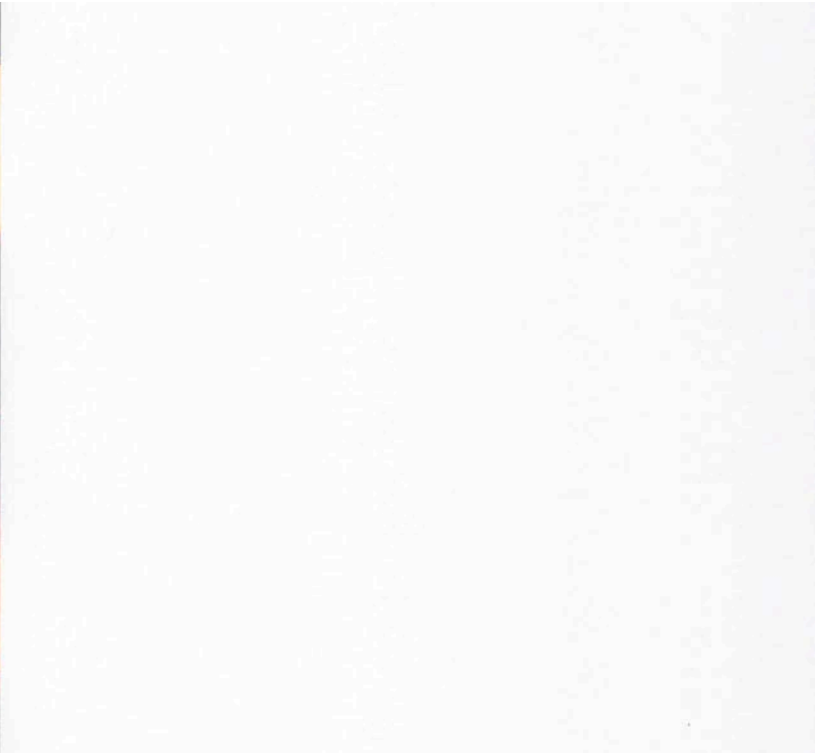
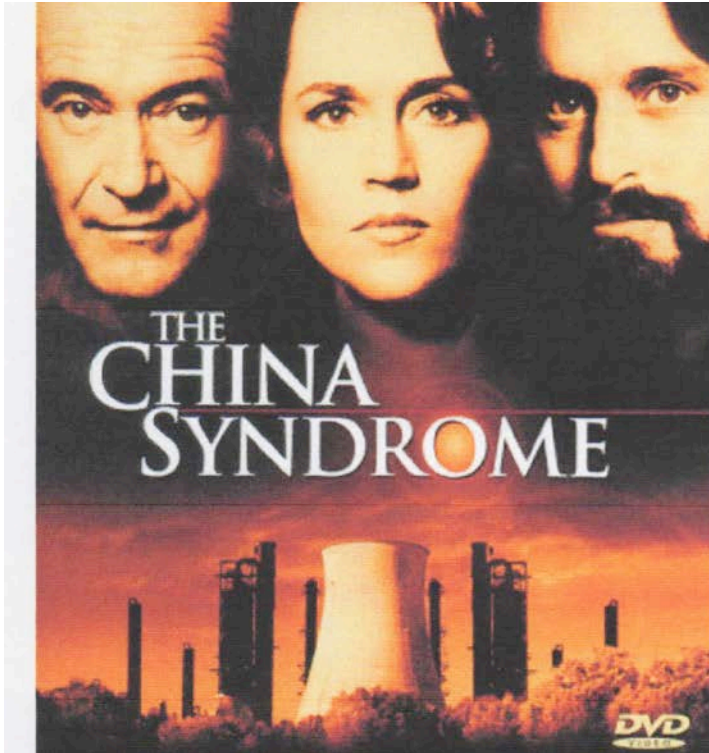
# TMI

**We've been given complete misinformation and conflicting statements from NRC here [onsite], NRC in Washington, the Governor's office, and the utility**

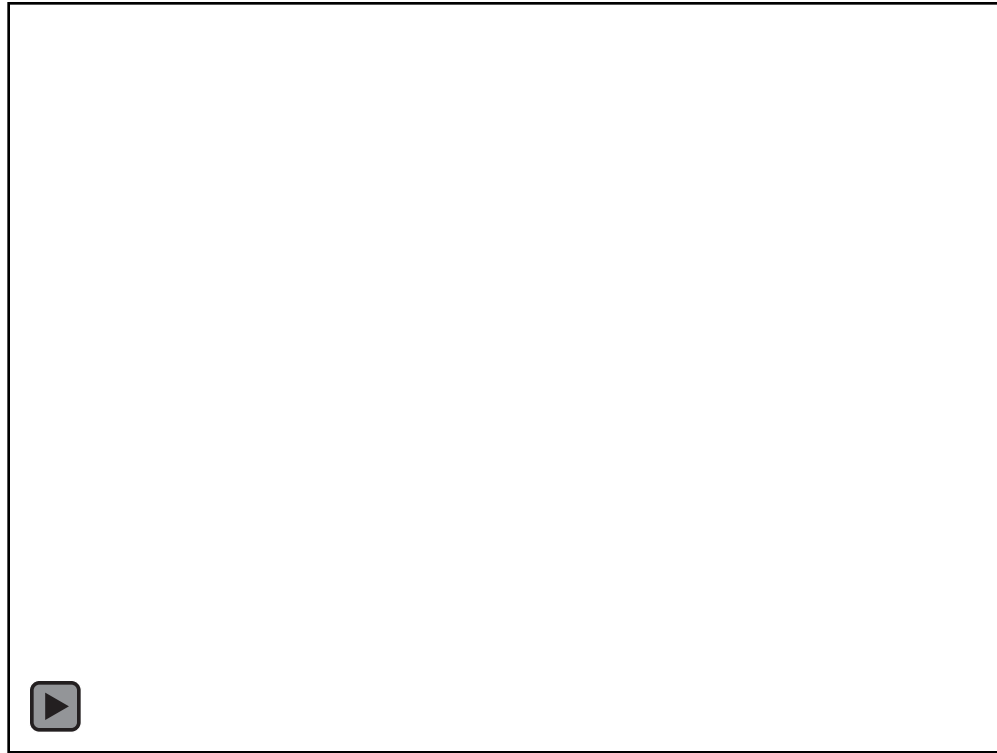
**The utility steadfastly understated the accident**

**NRC and the State advise reporters to ignore the utility – refer all questions to NRC**

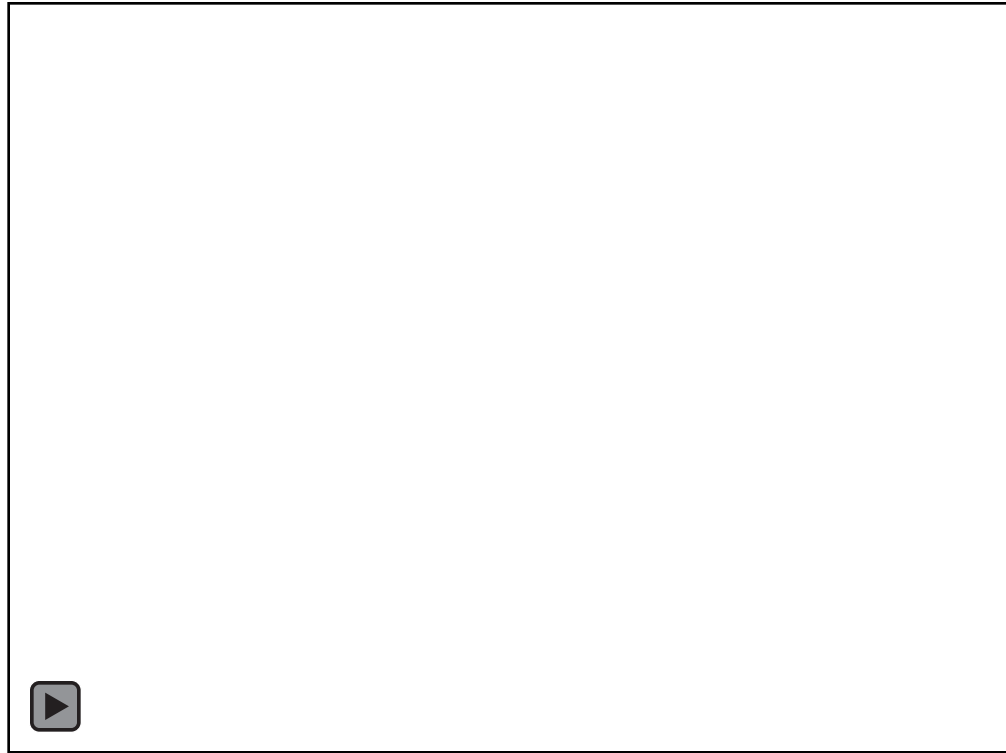
# LIFE IMITATES ART



# A CONTRAST - TMI



# A CONTRAST - CHERNOBYL





# LESSONS

**Inadequate planning and preparation on the part of those in charge**

**No clear assignment of leadership responsibilities – government, utility, plant management**

**Beware of “mental models” or “group mindset” of an expected universe – if circumstances don’t fit into the model, they are ignored – just “noise” in the system**

# LESSONS

**Culture can be a significant influence—  
Fukushima – a disaster “made in Japan”:**

**The ingrained conventions of Japanese  
culture – reflexive obedience, reluctance to  
question authority, devotion to sticking with  
the program – hampers the free flow of  
information and responsiveness –  
Fukushima Nuclear Accident Independent  
Investigation Commission**

# LESSON

**Culture continued, Fukushima**

**“Amakudari” or “descent from heaven”**

**“Amaagari” or “ascent to heaven”**

**A culture of complicity resulting in a revolving door of industry executives and government officials**

**The “nuclear power village”**

# LESSONS - CULTURE

**Chernobyl:**

**Secrecy and rigidity – “What happened in this country is that a rigid system was created and then life was herded into it”**

**M. Gorbachev**

# LESSONS - CULTURE

**TMI:**

**Optimism**

**Assumed that any and every potential  
accident had been defined and had been  
included in the Emergency Procedures**

# REMEDIES

**Preparation and planning are essential**

**REHEARSALS are critical!!! Including attempting to get beyond traditional cultural influences**

**Identify roles and responsibilities of key government and industry actors**

**Encourage fresh thinking and frank communication**

**Question assumptions, e.g., that you won't need backup power**

# REMEDIES

**Communicate early, often, clearly, honestly**

**“Try to share information about the whole iceberg, not only the tip of the iceberg” -what led to the decision, what scenarios were considered, what do you know and what don't you know**

**Forewarn the public about probable developments and guide peoples fears about worst case scenarios - “responsible speculation” – don't leave the public alone with its fears**

# REMEDIES

**Adequate preparation for a systematic public information program:**

**Convey the message in plain language; avoid “trust me, you don’t have to worry”**

**Timely and accurate information to the news media in a form that is understandable**



# REMEDIES

**Designate a senior technical executive to work with the media – may also help to counter misinformation**

**Hire and train specialists to work with the media**

**Media training for senior NRC officials**

*See generally, NRC Action Plan on TMI –  
NUREG 0660, V. 1 and 2*

# REMEDIES

**Use technology and social media to your advantage**

**e.g., NRC under the leadership of OPA has upgraded its press operations capability in its new building**

**Fiber optics to accommodate network TV satellite trucks**

**Multimedia conference rooms for the media**

# REMEDIES

## **CRITICAL INFRASTRUCTURE NEEDS:**

**Need an independent, well-funded regulator, with technical capability and research capability**

**Need transparency and openness in the regulatory process – establish relationships with NGOs and other affected interests on important safety and environmental issues, well in advance of any accident**

# REMEDIES

**There may be a role for nongovernmental groups in providing accurate information e.g., the National Council on Radiation Protection and Measurement's newly formed Program Action Committee on Radiation, Education, Risk Communication, Outreach, and Policy**

# FAILURE OF THE IMAGINATION

**Failure of the imagination can be deadly!**

**Failure of the imagination is when something seemingly predictable (particularly from hindsight) and understandable was not planned for**

**For example, Fukushima, where multiple safety systems fail at the same time from a single cause**

# FAILURE OF THE IMAGINATION

**Use “safety imagination” to look beyond well-defined frames of reference**

**Step beyond the institutionally defined assumptions about what the likely hazards and consequences will be**

**Counter complacency and the view that it won't happen here**

**Play the “what if” game**