Our Friend the Atom!

Nuclear fears and communicating radiological information during a time of crisis
NORAD Tracks Santa Claus...
What do we know about radioactive stuff?
It’s part of a larger problem...

We don’t know jack about science!
What the public doesn’t know...

33% think all radioactivity is human created

55% can’t explain why you see lightning before you hear thunder

51% don’t know lasers work by focusing light instead of sound

SOURCE: National Science Foundation
47% don’t know that electrons are smaller than atoms

49% don’t know that it takes the Earth one year to revolve around the Sun

28% don’t know that the Earth revolves around the Sun

SOURCE: National Science Foundation
33% think astrology is “science”

19% with grad/professional degrees think astrology is “science”
How do we rate internationally?

1. China
2. Singapore
3. Japan
4. Estonia
5. South Korea
6. Vietnam
7. Poland
8. Liechtenstein
9. Canada
10. Germany
11. Taiwan
12. Netherlands
13. Ireland
14. Australia
15. New Zealand
16. Switzerland
17. Slovenia
18. United Kingdom
19. Czech Republic
20. Austria
21. Belgium
22. Latvia
23. France
24. Denmark
25. United States

https://en.wikipedia.org/wiki/Programme_for_International_Student_Assessment#Table
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Seriously?

Liechtenstein Is beating us?

WE TOTALLY SUCK!!

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So how can you expect them to understand information about radiation?
“Since 1945 the fear of nuclear radiation has developed into an anxiety as deep rooted in western culture as was the case with electricity in the nineteenth century. Radiation is for most people inexplicable, unseeable, untouchable...”

House of Commons Environment Committee, 1986
Radiological Communication Challenges

• Nuclear/radiation risks perceived to be one of “riskiest” and “most dreaded” (Rosa & Freudenberg, 1993)

• High degree of public apprehension and misinformation about radiological risks (Putnam, 2002)
Radiological Communication Challenges

Virtually no public education has taken place about what an individual should do in the event of a nuclear/radiological event

(Columbia University, 2010)
Talk to Me

Keys to clearly communicating radiation risk and reality
Some Distinctions...

Risk & Crisis
Risk first:
Risk Definition

The probability that a natural, technological, or civil threat to people, property, and the environment will occur.

Risks are constant, there is always a risk of something!

Godschalk, 1991
What is Risk?

Something bad may happen
Risk Perception – it’s subjective

- Media coverage
- Human created
- Sense of control
- Familiarity
- Adult or child
- Too big?
- Trusted source
Risk Perception – it’s subjective

- Media coverage
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- Adult or child
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- Trusted source
We make snap judgments then construct our reasons later.
Cognitive Dissonance: Information Fight or Flight

RUN AWAY!!!!
Preparing for Risk

Three things motivate preparedness

Average people share what they have done

Behaviors vs. science or disaster impacts

Repetition, repetition, repetition...

Mileti, et al., UCLA
Is it written to a level they can understand?
Putting it to the test...

Readability Score = 46.6
Average Grade = 12.1
Putting it to the test...

Readability Score = 46.6

Average Grade = 12.1

Wall Street Journal

Harvard Business Review
Some Distinctions...

Risk & Crisis

Now crisis:
Crisis Definition

Occurrence with potentially negative outcome affecting an organization, company or industry, as well as its publics, products, services, or good name

Crises last a finite period of time

Fearn-Banks, 1996
What is a Crisis?

Something bad has happened
Even at the best of times communication is hard!
Let’s try it out...
Draw a bug!

Draw the bug that I describe

You may not ask questions

You may not talk to each other
1. The bug is round.
2. The bug has eight legs, grouped in pairs with four legs on the left and four legs on the right. In the pairs, one leg is longer than the other.
3. The bug has two eyes on top of the body.
4. The bug has two squiggly antenna.
5. The bug has two pea-pod shaped wings.
6. The bug has a spot next to each wing.
7. The bug has a triangular stinger on the bottom of the body.
8. The bug has two feelers on each foot - one longer than the other, both coming from the same side of the leg.
9. The bug has a round mouth, placed between the two eyes.
10. The bug laid five square eggs to the left of the stinger.
If it’s this hard to draw a bug...
We get dumb...

During a crisis people are under stress - our ability to process and understand information is diminished
People do not panic

Information hungry

Messages effective when frequently repeated

Want information from multiple sources

“Milling” will occur

Instructions must make sense

Mileti & Sorensen, 1990
Timing is everything!

How your agency/profession handles the first hours of any crisis will often define its reputation for the duration of the event and perhaps long after.
Words have power

The words and terms we use can mean different things to different people depending on how they interpret them.
Scary Words

Words are rife with connotation – and can be very powerful in explaining, persuading, enraging, or scaring the heck out of us!
Be afraid...be very afraid

The human brain is hardwired for fear

- Fear is contagious
- We pay attention if others are too
- Control diminishes fear
- Credible experts (trustworthy) diminish fear
- Natural or human created?
- Uncertainty = fear

SOURCE: How Risky Is It, Really?
Loaded Language

Wording to influence by appealing to emotion.
Particularly persuasive as it preys on human propensity for acting on emotional response.
Loaded Language - example

When Kraft Foods invented processed cheese, traditional cheese makers wanted it to be labeled "embalmed cheese".

The U.S. government considered it disparaging and labeled it "process cheese"
Deepwater Horizon

“How can we exploit the aqueous solubilities of the petroleum hydrocarbons, benzene, toluene, ethyl benzene, and total xylenes to understand plume formation”

SOURCE: Christopher Reddy in Eos
Dude, you’re speaking Romulan!
Crisis Information tips

• Avoid jargon
• Clear, concise
• Make technical details clear – simple comparisons
• Graphics help!
Fukushima Radiation – Western US

Background Radiation
Fukushima Radiation – Western US

Background Radiation

Extra Radiation
What people want to know in a crisis...

Message Triangle

WHAT DOES IT MEAN TO ME?

WHAT ARE YOU DOING TO FIX IT?

What is it?
During a crisis give them AIR!

Alert, Inform, Reassure
Alert, Interact, Respond
Alert, Influence, Recruit
Crisis Information tips

• Tell people what to expect
  – Likely to happen
  – Worst case?
• Give them something to do
• Let them know you supply the information
Why we do it...

• Getting important information to people when they need it
• Creating / enhancing authority and credibility
• Calming public fear/anger
• Enhancing control over information (framing)
• Providing damage control for agency image
Why we do it...

Psychological first aid
Don’t fall for the classic blunders

The most famous of which is "never get involved in a land war in Asia,"...
6 Crisis Communication Blunders

• Mixed messages from multiple “official” sources
• Information released late
• Parental attitude
• Not countering misinformation in real time
• Public power struggles and confusion
• Over reassuring
How to succeed

Have a plan:

- How to organize
- Who, What, Where, When, How
- Who else needs to know?
- Training
How to succeed

You’re going to need a team!
News Media Simulation
What to say when you can’t say anything...

- Tell them **why** you can’t talk about it
- Explain process
- Get back to what you can talk about
Let’s do a thought experiment!
What would happen...

...if an event released radiation at Argonne in the same amount that was released from WIPP?
Final notes on crisis communication...

You will make mistakes

Do the best you can
It’s gonna be messy!
If you are in a leadership position...

Give clear, realistic directives

Give access to information on all aspects of operations

Support attendance at all meetings and briefings

They need access to you

Training and practice
Primary Role of Public Information during a crisis

Getting the **RIGHT** Information
To the **RIGHT** people
At the **RIGHT** time
Through the **RIGHT** channel
So they can make the **RIGHT** decisions
First responders save lives – maybe 1 or 10 or even 100 at a time. But a well crafted and effectively delivered piece of crisis communication can save tens of thousands of lives
QUESTIONS?