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# Communicating Complicated Risk in a Skeptical and Non-science Literate Age

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# Why we do risk communication?



- Risk communication is done to meet the need for discussion of potential environmental, safety and health risks of NASA's space missions
- Risk communication as a separate area for NASA began with the launch of the Galileo mission
- Starting with Galileo, NASA has had lawsuits involving three space missions
- Risk communication issues of concern are:
  - Use of Space nuclear power and propulsion
  - Planetary protection – both protection of outer space and protection of Earth
  - Other environmental, safety or health issues as they arise



## Why is it so hard?



- **We are doing things that are new, that are hard, and that are unique**
- **Analogies are few**
- **Models and analyses are complex**
- **Risks are presented in esoteric ways**
- **Benefits and risks accrue to different groups**
- **Much of the public is not scientifically literate**
- **It is difficult to translate mission risks into language non-scientists can understand**
- **Failures of some of highly visible projects creates doubt**
- **People are skeptical of government agencies**



# Planning Risk Communication



- **All risk communication begins with a plan**
  - **Planning is both a process and a document**
  - **The necessary elements for risk communication planning are:**
    - **Research**
    - **Expert advice**
    - **Coordination**
    - **More coordination**
  - **The key parts of a risk communication plan are:**
    - **Goals and objectives**
    - **Roles and responsibilities**
    - **Assessment of audiences and their needs**
    - **List of products/activities**
    - **Description of how processes work**



## Risk communication decisions



- **Planning and decision-making are not the same, but are intertwined**
- **Key decisions that have to be made before planning is complete are:**
  - **How much risk communication is enough?**
  - **Do we include public engagement? If so, how much public engagement is enough?**
  - **What risk communication products do we need?**
  - **What format do we stress? Print, video, web-based?**
- **Who gets to make the decisions? How many people have to make or approve the decisions?**
- **What if you get 90% agreement? Is that good enough?**



## The message



- There is a lot of good advice on how to communicate risk
  - Keep It Short and Simple (KISS)
  - Key Point Up Front (KPUF)
  - No jargon
- The key is to balance the science and the layperson's understanding
- Determine what terms need to be defined, then define them, more than once if necessary
- Consider how much information is actually useful
  - too many numbers and concepts may add to confusion people further



- **Risk communication training is essential**
- **Those who don't think they need it may need it the most**
- **It is essential to get expert advice on risk communication training, advice that combines media training expertise with knowledge of risk communication**
- **Preparing issues, questions, and technically correct responses prior to training is key**
- **Know the audience(s) and prepare accordingly**
- **Practice, practice, practice**



## Final steps

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- **There is no such thing as a completed risk communication plan, unless the project is cancelled**
- **Things change, people change, people change their minds**
- **Lessons learned exercises should be ongoing**
- **Feedback can be very helpful**
- **You will have to coordinate over and over, nothing is ever good enough, or done**
- **Expect small victories**