

Probability x
Consequences

Hazard +
Outrage

Effective Risk Communication

The Nuclear Regulatory Commission's Guidelines for External Risk Communication

Shared
Understanding



UNITED STATES
NUCLEAR
REGULATORY
COMMISSION

Effective Risk Communication

The Nuclear Regulatory Commission's Guidelines for External Risk Communication

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Graphics Key



Things to remember

A summary of the main points in the chapter.



Practice Tip

An NRC-related exercise idea you can use to rehearse the techniques explained in the section before having to use them in an actual risk communication situation.

1 Defining Risk Communication

What is it? Why is it important?

Risk communication is an interactive process used in talking or writing about topics that cause concern about health, safety, security, or the environment.

Today's environment for risk communication is complex. Public fear and concern about exposures to hazards have increased along with a corresponding demand for information. The NRC is working to integrate risk analysis into its regulatory activities, and this trend is mirrored in many other government agencies in the United States and abroad. As risk analysis becomes an important dimension of public policy, the need to improve risk communication with internal and external stakeholders is also increasing.

What is risk?

The NRC uses the following concept of risk to prioritize resources and make decisions about compensatory measures:

Risk = Probability x Consequences

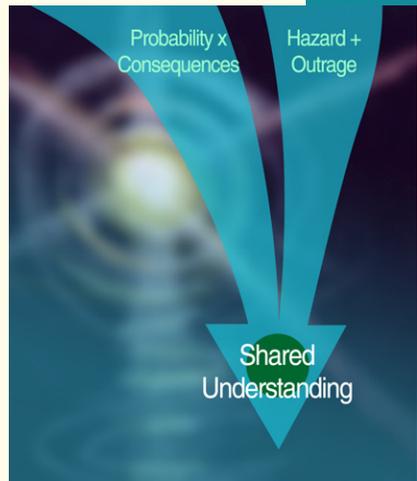
It is about balancing the likelihood of an occurrence against a set of consequences ranging from relatively benign to potentially catastrophic. The NRC's assessment of risk rests on sound scientific analysis.

Public views about risk, on the other hand, are summarized in risk communication expert Dr. Peter Sandman's equation:*

Risk = Hazard + Outrage

Put another way, the probability that something bad will happen to people combined with the aspects of the situation that upset them leads to their perception of risk. Factors that may influence public outrage include perceived magnitude of the hazard, lack of knowledge of the hazard, distrust in the institution managing the hazard, and level of media attention.

The differences between the NRC's and the public's definitions and perceptions of risk create a situation similar to two people speaking in different languages. The only way to engage in



* www.psandman.com

meaningful dialogue is by first creating a shared understanding. Applying a consistent risk communication framework will help the NRC build the organizational and individual risk communication skills necessary to discuss scientific decisions in a nonthreatening manner while conveying the NRC's commitment to public safety.

Why is risk communication a priority for the NRC?



Risk communication provides the essential links between risk analysis, risk management, and the public. Successful completion of the NRC mission requires integration among each of these areas regarding values and assumptions, technical information, and decisions.

You need risk communication to reconcile differing perceptions of risks and gain an appreciation of stakeholders' points of view.

"We can have the most advanced risk insights, the best science, the leading experts in the field, but if we do not have an effective communication plan, we will fail."

NRC Commissioner

How to do it

In practice, risk communication is a team effort involving multiple organizational entities of the NRC (project managers, legal affairs, public affairs, safety inspectors, analysts). It works at two levels—strategic (agencywide) and interpersonal (between and among NRC staff members and stakeholders). Strategic risk communication is an integrated component of risk management

and vital to the NRC's mission. At the strategic level, risk communication is a process that involves the following:

- long-term planning and coordinated communication efforts,
- strategic partnerships,
- collaborative problem solving,
- common understanding of strengths and limitations of risk analysis,
- consistent messages, and
- appropriate tools for both internal and external communication.

At the interpersonal level, risk communication involves applying a variety of skills and tools to communicate in sensitive situations where people are concerned about health, safety, and the environment. This level of risk communication relies on the following:

- empathetic listening and letting others know you care about their health and safety,
- building trust and credibility,
- establishing long-term relationships,
- sharing expertise and insights,
- fostering understanding of risk analysis in all NRC employees,
- translating technical information into understandable layperson language,
- managing conflict, and
- effectively delivering NRC messages.

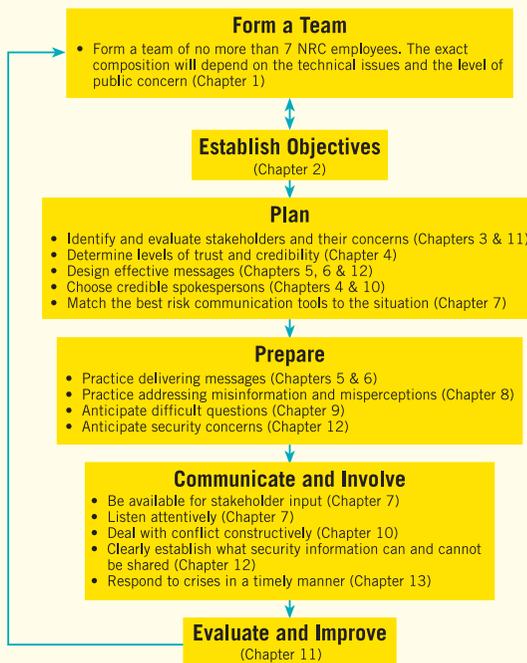
“We thought we were knowledgeable, but found that we were far from effective. On a personal level, I felt I was not doing my job as a public servant. Once a woman said, ‘I hear what you’re saying, but I don’t believe you.’ That was like getting punched in the stomach. We meant well, but meaning well isn’t enough.”

NRC Staff Member

All NRC employees should cultivate these skills; however, it is often beneficial to seek the assistance of professionals in communication, facilitation, or conflict resolution. These resources are available within the agency as well as from external sources.

What steps do I take to implement communication?

As you read through this book, you use the following road map as a guide to implementing an effective risk communication plan. These basic steps are elaborated in the chapters that follow.



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2 Objectives for Communicating

What is my purpose for communicating?

The first step of effective risk communication is identifying the purpose of the effort. It's important to understand whom are you talking to—your stakeholders—what they know about your topic, and what you want to achieve by communicating with them. Don't assume you already know what you want to say, or why, or to whom. Are you communicating to educate, change perceptions or behavior, gather input, or achieve some other purpose? Skipping this step can lead to using the wrong risk communication tools and methods, answering the wrong question, or communicating a completely different message than that intended.

Am I providing information?

As an NRC employee you might be tasked with providing information to the public about numerous issues, including inspection findings and their significance, changes to regulatory requirements, security and safeguards issues, or how the decision-making process works. The information might be needed to respond to a stakeholder's concern, meet legal notification requirements, or support stakeholder involvement in risk management decisions. (For more, see "Learning about Your Stakeholders," Chapter 3.)

Am I gathering information?

Since risk communication involves two-way interaction, another key objective might be to learn about stakeholder concerns, perceptions about risks, expectations about involvement in risk management decisions, or local information that will assist in risk analysis. (For more, see "Learning about Your Stakeholders," Chapter 3.)

Am I building trust and credibility?

The need for trust and credibility is always an underlying concern for risk communication. In cases where trust is particularly low due to past history or the seriousness of an event, however, restoring trust and building relationships might be a primary objective. (For more, see "Building Trust and Credibility," Chapter 4.)

Am I seeking involvement?

Another objective might be to ask stakeholders for input in a decision-making process. Involvement can range from providing opportunities for stakeholders to express their views, to determining the impact of alternatives on stakeholders, to facilitating their participation in the decision (as in the case of an advisory board). If stakeholder involvement is your goal, make sure to be clear about the level of involvement and the process that will be used to avoid conflict based on differing expectations about roles in the decision. (For more, see “Implementing Effective Two-Way Communication,” Chapter 7.)

Am I influencing behavior or perceptions about risk?

Risk communication can be aimed at influencing people’s behavior and perceptions about risk. The goal might be to place a risk in context or to encourage a change to less risky behavior. Emergency notification system response and health advisories fall in this category. (For more, see “Communicating Complex Technical Information,” Chapter 6, “Countering Misinformation and Misperceptions,” Chapter 8, and “Communicating in a Crisis,” Chapter 13.)

Once you have identified your communication objectives, you will be able to make better decisions about what risk communication tools and processes will be most effective.

Things to Remember

- *Don’t assume you know what you want to say until you consider your goals and know your audience.*
- *The best way to uncover your communication objectives is to ask yourself questions.*

Practice Tip

Write down your communication objectives, using the questions above as a guideline. State your objectives as briefly as possible, in 25 words or less. Once you have concisely stated your own objectives, try to place yourself in the position of various public stakeholders. What might their objectives be?



3 Learning about Your Stakeholders

Who are they?

What are their concerns?

During a meeting regarding an incident at a facility, a local resident asked a simple question: “Am I safe?” The question was simple, but the answer was not. The answer was given in technical terms and included the use of acronyms not familiar to the citizen. As a result, her anxiety level increased. By developing an understanding about the values, concerns, and issues facing stakeholders and their communities, you can be better prepared to answer your stakeholders’ questions with relevant information that provides reassurance.

For starters, do your homework. The foundation of effective risk communication is a working understanding of the people and the issues. Determining who your stakeholders are and understanding their perspectives are the only ways to have the information you need to make effective use of risk communication resources. A good way to start the stakeholder identification process is to ask questions like these:

- What are the issues? What is at stake?
- Who is most likely to be affected by the problem or issue?
- Who is concerned? What do they care about and why?
- Whom do I need to involve and keep informed?
- What are the hot topics that I need to address?

The NRC’s external stakeholders

External stakeholders are agencies, groups, elected officials, the regulated community, and individual citizens outside the agency that have either an administrative or personal interest in the NRC or the nuclear industry the NRC regulates. The NRC’s external stakeholders fall into the following categories:

- Organizationally impacted stakeholders are usually readily identifiable and include groups such as elected officials, regulatory agencies, and licensees.
- Personally impacted stakeholders include people whose lives are likely to be impacted by a proposed action or decision. Individuals in this category can represent a variety of back-

grounds, interests, and concerns and will take the most effort to reach. However, because of the potential impact of a proposed action on a stakeholder in the category, significant effort should be expended to ensure this group's notification and participation as early in the process as possible.

- Generally concerned stakeholders include citizens, advocacy groups, and other organizations. These people interested in or concerned about an action or decision can be reached by electronic and print media and will identify themselves as stakeholders in the process. Advocacy groups are important and should be proactively engaged.
- Media constitute a unique category of stakeholder. While they have their own interests and constraints, the media also serve as vehicles for public debate and communicating with the public. Information provided to the media should be appropriate, understandable, and timely. In addition, consider how reporters will perceive, understand, and interpret what they hear and see. Remember that the media have their own interests and objectives, so communicating with media is different from communicating with other stakeholders. Specialized training is recommended for agency representatives who interact with the media.

How do I get to know my stakeholders' concerns?

A good risk communication program addresses stakeholders' concerns. Depending on time and resources available, there are different methods for gathering information about these concerns. Expect a range of opinions, and understand that these concerns can change over time.

"We always talk to residents...they are a great resource, and the licensee also."

NRC Staff Member

Remember, too, that numerous factors can influence the public's perceptions about the risks associated with the safety of nuclear materials and facilities:

- proximity of area residences, schools, or parks to the facility;
- population density;
- presence of livestock, crops, or other vegetation near the facility;
- activity of local interest groups or press;
- past experience with government officials; and
- economic impacts.

What can I learn without leaving my desk?

Reach out to NRC staff. Resident inspectors, project managers, office communicators, the Office of Congressional Affairs, and the Office of Public Affairs can provide a wealth of information about a facility and the community and also have opinions and insights about the community's perceptions of the NRC. Others within the NRC may have experience in the area—you can learn from their successes as well as their mistakes.

The licensee can be used as another important source of information about local concerns and stakeholder contacts.

Use the Internet to research the background of your stakeholders to identify

- demographics;
- ethnic background;
- languages and the need for translators;
- sensitive populations, such as elderly people, pregnant women, and children;
- media contacts;
- popular activities and gathering places;
- accessible resources such as computers, e-mail, and fax machines; and
- the history of the facility.

The U.S. Census Bureau (www.census.gov) is a good source for information such as racial diversity, income, educational attainment, and employment.

Newspapers are another source of information. The interests and concerns of the community are reflected in local media coverage. Both national and local newspapers are usually available via the Internet.

The NRC library contains a wealth of background material from both internal and external sources.

Who are the opinion leaders?

A single organization or individual cannot represent the diverse interest and concerns of your stakeholders. However, research within the community can identify community leaders who can not only give you the "pulse" of the community but also become part of your outreach strategy. The public often looks to these leaders

for guidance. Several strategies exist that can help you identify these leaders:

- Contact local officials. They may be opinion leaders and can also refer you to groups, organizations, or leaders within their communities.
- Reach out to representative organizations. For example, is the predominant land use in the area agricultural? Contact a local farming organization to reach your stakeholders.
- Are there local interest groups? Reach out and involve these groups.
- Contact local newspapers. Provide them with background materials, NRC resources, and third-party references to help promote balanced coverage of the issues.

The direct approach

Interviews and focus groups can provide you with the opportunity to learn your stakeholders' concerns. Stakeholder interviews typically occur in informal settings such as homes and offices in the community. Here are some potential interview and focus group questions:

- What is your understanding of the facility's history?
- What are your current concerns?
- What contacts have you had with government officials?
- Do you feel these officials have been responsive to your concerns?
- What kinds of information do you need?
- How do you want to receive information and how frequently?
- Can you suggest other individuals or groups that should be contacted for additional information?

What are their concerns?

Your stakeholders may be concerned about health, financial, security, or other issues that may extend beyond the NRC mandate. Their concerns may be based on known facts, data, or science or on emotional reactions such as fear. Understanding these concerns and their bases will inform your risk communication strategy.

Another issue to consider is the influence of agendas. Is it an election year? Political elections provide grandstanding opportunities for candidates. Anticipating hidden agendas may help you bring these motives out in the open.

Things to Remember

- *External stakeholders include people who are organizationally impacted, personally impacted, and generally concerned as well as the media.*
- *Background research will help you to understand your stakeholders' perspectives and serve as the basis for your risk communication strategy.*
- *"All politics is local." Because your communication efforts will vary with each situation, building relationships with local officials and paying attention to local issues can be keys to success.*

Practice Tip

Take some time to learn more about NRC stakeholders and their concerns. Think of a specific location where you have worked or where you know there has been controversy, and visit the local community newspaper's Web site to learn the issues of concern. Browse additional Web sites including the local city or county government, chambers of commerce, and the U.S. Census Bureau. Background knowledge of stakeholders will come in handy during future interactions. Showing that you care to know something about their community will have an impact on how stakeholders communicate with you.



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4 Building Trust and Credibility

How can I have positive relationships with my stakeholders? How do I build trust? How do I regain trust?

Imagine that you are purchasing a home. While inspecting it, you find a crack in a wall. The realtor and an inspector insist that the house is just naturally settling, but you're concerned there might be erosion beneath the foundation or structural compromise. Do you buy the home? Do you get another opinion?

Your decision is based on your assessment of whether the realtor and inspector are trustworthy and credible. Stakeholders form their opinions in much the same way. Whom can they trust? Who do they think is credible?

How to build trust

When you take the time to listen to people and try to understand their perspective, you build credibility and trust.

- Be open and honest—Communicate early and often. You must be willing to admit mistakes, deliver bad news, and share information.
- Encourage questions in any areas where there may be concerns or interest—Sometimes people need to be encouraged to speak out.
- Coordinate and collaborate with other credible sources—Build alliances with credible third parties to raise your credibility. These third parties should have credibility equal to or better than yours. Examples of third parties are university professors and members of environmental or neighborhood groups.
- Be organized and prepared—Make sure you have planned carefully and are ready before interacting with stakeholders.

Components of Trust

Empathy—A sincere effort to understand how it would feel to be in the stakeholder's position. Empathy is not the same as sympathy or agreement.

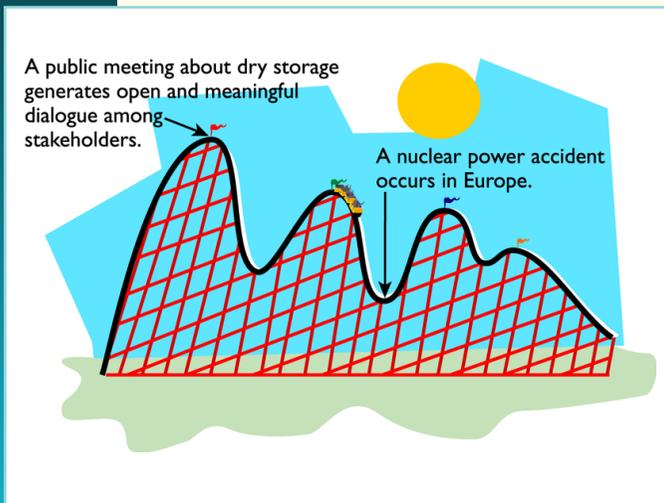
Honesty—Truthfulness and openness about what you know and what you don't know. Lean toward providing more information rather than less.

Commitment—Dedication to ensuring public safety and to openly communicating with stakeholders to understand their perspectives and to help them understand yours.

Competence/Expertise—Capability in your profession. When interacting with stakeholders who do not share your expertise, your technical competence is only one factor in your credibility.

They will easily sense whether you are “winging it,” which will only diminish their trust in you.

- Use language, terms, and concepts that make sense to your stakeholders, even if you are more comfortable using technical jargon—Stakeholders can interpret highly technical presentations as an attempt to obfuscate meaning.
- Acknowledge that you have heard what stakeholders are saying, whether or not you agree with it.
- Ask for input from stakeholders on what communication processes or techniques they prefer, and use those as much as possible—Use techniques that are accepted as fair by all parties.
- Follow through on commitments—Deliver what you promise. If you say you’ll get back to someone with an answer, do it.



How to lose trust

Trust is difficult to gain but easy to lose. Just as there are steps you can take to build trust and credibility, there are ways you can lose them. Some factors are within your control, but your credibility also can be negatively affected by factors outside your control.

Some actions that can harm your credibility include the following:

- ignoring the public,
- disregarding suggestions and concerns by stakeholders,
- becoming defensive,
- hiding information,
- releasing risk information that risk analysts do not support,
- appearing to act solely in licensees’ interests, and
- not fulfilling commitments.

Factors outside your control include the following:

- media coverage,
- incidents at other facilities, and
- national crises or emergencies (e.g., September 11, 2001).

How to regain trust

Whether you have lost trust and credibility through your own actions or as a result of outside events, there are ways you can regain them. In addition to employing all the ways to build credibility, including acknowledging past mistakes, you also can

- take responsibility for actions and inactions,
- apologize if appropriate, and
- show evidence of past safety performance and future commitment.

Example: *"Yes, it is true that we dropped the ball on It does not represent NRC's finest hour; however, we have methods for correcting ourselves, and we are committed to learning from our mistakes. We realize that to regain your trust, the NRC needs to demonstrate our commitment to keeping you and your family safe through our actions not our words. For example, to address the issue of ..., the NRC is taking the following actions...."*

Things to Remember

- *Being open and honest goes a long way toward building credibility.*
- *Trust and credibility go up and down because of factors both within and beyond your control.*

Practice Tip

Think of three people that you rely on for their professional expertise. These people may include a doctor, a mechanic, national spokesperson, etc. What is it about these people that has helped them earn your trust? What can you and the NRC do to emulate those characteristics?



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5 Crafting Effective Messages

What should I say in my next presentation, e-mail, letter, or phone call?

How do I use analogies?

How do I convey the NRC's mission?

Before writing a letter or e-mail, calling, or preparing for a meeting with stakeholders, you need to determine your communication objective. Is it to educate, change perceptions, gain consensus, raise awareness, or some other purpose? (For more, see "Objectives for Communicating," Chapter 2.) Then write three or four key messages to accomplish your objective. Using more than just a few messages will weaken the overall thrust of your communication and may overwhelm the audience. The messages you write should be brief, accurate, straightforward, easy to understand, and consistent. Your messages should highlight the NRC's role in ensuring nuclear safety and be backed by two to four supporting facts that are stated in plain language and demonstrate a response to stakeholder concerns you have heard.

Typical types of messages include the following:

- messages to educate about the NRC's proper role in regulating nuclear power and ensuring the safe transport and handling of nuclear waste,
- messages that confront problems ("get ugly first") and simply communicate the NRC process for identifying and overcoming an issue,
- messages that concisely address the "Is it safe?" question from the viewpoints of various types of stakeholders, and
- messages that reassure the public when things go wrong.

As you construct your messages, keep the following principles in mind:

- Be proactive—Don't wait for a public affairs nightmare. An ongoing and continuing dialogue between your agency and the public goes a long way in preventing communication crises.
- Obtain internal agreement on the message—Be aware of what others within the agency are saying about an issue, and realize that everyone has a part to play in reaching consensus on NRC messages. Put the NRC's position on an issue in writing to ensure that everyone has the same understanding of the issue. Even slight variations in the wording used to present results or conclu-

sions can be disastrous if they highlight possible disagreements among agencies or within the NRC.

“The external realm didn’t buy the ‘below regulatory concern’ concept. The public was outraged because they didn’t understand the concept, and it wasn’t explained to them.”

NRC Manager

- Tailor the language to the audience—Consider reading level, language barriers, concerns about the issue, experience with risks, and science understanding.
- Use simple and clear language—Avoid acronyms, jargon, and shortcut explanations with all audiences. (See “Communicating Complex Technical Information,” Chapter 6.) Even across offices within the

NRC, people have different understandings of technical terms.

- Avoid language that conveys to the audience they have no control—If a decision regarding a planned action hasn’t been made, keep verbs conditional.
- Avoid absolutes—Don’t present estimates as facts. Explain estimates in terms of the assumptions and the range of uncertainties.
- Explain that risk is overestimated to provide an extra margin of safety.



A Fish Story

During a public meeting following the Three Mile Island incident, an NRC staff member was presenting his data and analysis on the levels of contaminants found in local fish. Explaining the test results and the standards he was applying did not seem to be having an impact. Judging the mood of the crowd to be unresponsive to further technical detail and analysis, the speaker decided to answer the “Is it safe?” question in a more direct way. He relieved the tension of the moment and satisfied the audience that the fish were healthy by providing one additional fact, “We ate the extras!”

Moral: Using personal examples and anecdotal evidence can be more effective in getting your point across than lots of numbers, quantitative analysis, and applications of standards.

Use analogies and stories to illustrate your technical information

For some audiences, the most effective messages are personal stories highlighting how you, as a fellow human being, are affected by some risk. By sharing how you feel about some risk, you help the audience understand how you evaluate the risks based on your own experience. Let the audience know, for example, that you live near the nuclear power plant and that you have thought through many of the concerns they raise to reach the conclusion that your family is not at risk.

Communicate the NRC mission

Underlying all NRC communication about risks is the message that the NRC is the right agency to ensure the safety of nuclear power, nuclear waste storage and transportation, and nuclear materials. In getting out the message that the NRC is dedicated to and capable of carrying out its mission, you can answer the public's most crucial questions regarding the agency:

- *Can I trust the NRC?* The NRC must be able to articulate its expertise as well as its humanity when communicating and interacting with the public.
- *Is the NRC committed to safety and security?* The NRC must explain its role in protecting public health and safety and educate the public on its goals and values. The NRC must prove its commitment to protecting individuals, communities, and the environment.
- *Does the NRC care about me?* The NRC must understand and value the public's concerns and articulate these concerns as well as, or better than, the public can. An empathetic approach to risk communication can reduce public skepticism.

“Good practice (is) to always first explain to the public what it is that the NRC does. They see us as government, and our role is not obvious. We do not promote nuclear power. We protect.”

NRC Staff Member

Things to Remember

- *Understand your specific objective for communicating with the public.*
- *Develop three or four messages in support of your objective when calling, writing, or meeting with the public.*
- *Frame the message to fit the audience. Consider the understanding of science, level of interest, underlying fears and perceptions of risks, and preferred methods of receiving information.*
- *Use language understandable to your specific stakeholders. Avoid technical jargon even when communicating within NRC office and with licensees.*



- *Get out the message that the NRC takes the public's thoughts seriously and has the expertise and the dedication to carry out its mission to protect the public.*

Practice Tip



Explain your job to friends or relatives by placing it within the context of the NRC's mission. Choose people not familiar with this information. Ask them to repeat what they heard you say. Did they get the messages you were trying to convey?

6 Communicating Complex Technical Information

How do I accurately convey complicated information without scaring or confusing my stakeholders? How do I explain the NRC's built-in conservatisms? How do I make the numbers understandable? How do I use risk comparisons? How do I communicate uncertainty?

The realization that effective risk communication depends on factors other than the simple presentation of technical information has evolved out of confusing and frustrating experiences for both technical experts and the public. Don't be seduced by the myth that emotion and controversy will fade away if you just explain the numbers. However, at a minimum, people need the NRC to clearly present its complex technical information and explain in an uncomplicated way how it applies its expertise to protect public health and safety. As a member of a technical organization, your competence may be evaluated on your ability to communicate your work clearly. Here are some tips for how to make technical information more understandable.

"People don't care about the overall risk, just how it will affect them personally."

NRC Staff Member

Acknowledge the public's right to make risk decisions

Let people know that you're there to listen as well as to convey information. Remember that even if you're successful in getting the public to understand the NRC's statistical approach to assessing potential health and safety consequences, the public may still find the risk unacceptable. Deciding on acceptable risk is a value question, not a technical question. People will make their risk decisions based on their own values, sense of risk, or stake in the outcome. In cases where stakeholders might not have a direct say

"(The) event of evacuation is very unlikely, but people worry about it the most. (They) don't capture defense in depth. (It's) very difficult to get people to move beyond worrying about the roads being jammed during an evacuation. (We're) not successful because (we) haven't given (them) an understanding of risk."

NRC Manager

in a decision, describe the process the public can use to get concerns heard.

Explain the built-in safety margins

“We need to be able to explain why it is okay to have a plant full of fallible parts and machines (that are) licensed to have radiation releases everyday.”

NRC Manager

Outline the agency’s concept of defense in depth, including the existence of redundant safety systems, constant monitoring, and containment. Without this level of understanding of how the NRC mitigates the risks of specific

component failures and leakages, the public is incapable of appreciating how the NRC incorporates safety into the overall system. Provide the context to help the public evaluate a risk in terms of the big picture.

Avoid common pitfalls when trying to use plain language

Everyone knows you should avoid jargon and acronyms; however, this is easier said than done. Here are some tips for avoiding some common problems:

- Setting the right tone is important. Speak as though you are addressing a relative or acquaintance new to the topic.
- Provide plain language explanations of NRC jargon and expressions. Here is one way, but not the only way, to describe defense in depth: *This phrase is used to describe the multiple protective layers that are in place at nuclear power plants to prevent accidents from occurring or radiation from being released to the public. These layers include metal and concrete physical barriers, redundant and diverse safety systems, well-trained personnel, and emergency response procedures. This is similar to a homeowner who uses multiple systems like dead-bolt locks, a burglar alarm system, and a dog to keep their home safe from intruders.*
- Avoid the urge to jump right into the details. Always start with the big picture. What problem are you addressing? What process did you use to reach your conclusions?
- If you are asked a highly technical question in a public forum, rephrase the question in simple terms and provide some

context so that you don't lose the rest of the audience. After providing a brief answer, you can also direct people to specific NRC documents that provide more details.

- When using terms that are not well understood outside of the nuclear arena, such as release or radioactive, give examples that illustrate both what the term means and what it does not mean.
- It is hard to break speech habits developed in talking to other NRC staff or licensees, where jargon and shortcut references to relevant regulatory guides are the norm. Adequate preparation and practice are the only solution. Practice, practice, practice.
- Don't use technical terms that dehumanize people. Distant, abstract, and unfeeling language about potential death, injury, and illness sends the message that you don't care about people as individuals.

NRC Jargon and Expressions

- Core damage frequency
- Common cause failure
- LERF
- Significance Determination Process
- Safety-related
- Risk significant
- Defense in depth

Match the level of technical detail with the communication technique

Stakeholders have diverse scientific backgrounds, perceptions of risk, interest levels about radiation issues, and needs to express their opinion and be involved in decisions. You can develop a variety of materials with different levels of technical detail to appeal to a broad spectrum of NRC stakeholders.

- Use presentations to communicate key messages and provide context. Keep all presentations brief. Allow approximately two minutes per slide. Use succinct phrasing and no more than seven lines per slide.
- Be prepared to satisfy requests for more technical detail by making handouts available.
- Use a range of tools such as diagrams, outlines, and analogies when explaining complex phenomena to promote understanding.

- You can also encourage those interested in risk numbers to talk with you after the meeting or at a later date have a one-on-one or small-group discussion of the numbers and what they mean.
- Pointing interested stakeholders in the direction of credible sources of information outside of the NRC can also be effective.

Make the numbers understandable

Keep it simple. Select and explain a few numbers as opposed to many technical details, which may confuse the audience. Using familiar units of measure and transforming scientific notation into concrete examples based on whole numbers can help the public understand the size of a risk.

Make simple transformations

Transform small decimals into whole numbers and simple fractions whenever possible.

- 0.004 parts per million can be changed to 4 parts per billion.
- A risk of 0.032 can be changed to a risk of 32 out of 1,000 or 3.2 out of 100, which could be further changed to “approximately three people in a group of 100 could be affected.”

Make concentration comparisons

The following comparisons show how concentrations can be changed into more familiar units of measure:

- 1 part per million = 1 inch in 16 miles
1 minute in two years
1¢ in \$10,000
1 apple out of 2,000 barrels of apples
- 1 part per billion = 1 inch out of 16,000 miles
1 second out of 32 years
1 pinch of salt out of 10 tons of potato chips
1 apple out of 2 million barrels of apples

Transform risk numbers

Instead of using a risk that is expressed like “the risk of additional cancers is 3.2×10^{-6} ,” you could present the following scenario:

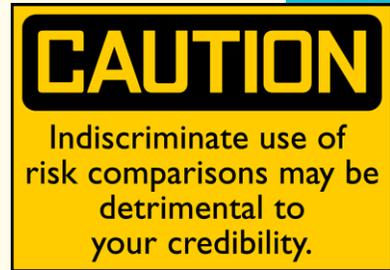
“Imagine 10 cities of 100,000 people each, all with the same exposure to contaminant X. In seven of these, probably no one

would be affected. In each of the other three cities, there would probably be one additional cancer, on average.”

You may also want to provide additional context by indicating the overall incidence of cancers from all causes. According to the Harvard Center for Cancer Prevention, about 1.2 million Americans are diagnosed with cancer each year.

Understand the pros and cons of using risk comparisons

Risk comparisons may help your audience understand more clearly how an unfamiliar risk compares to a risk that is more familiar. However, using this type of risk comparison can backfire. While some members of the public may appreciate your efforts to clarify risks, others may feel that you are trivializing risks important to them. Comparing the risks of living near a nuclear power plant to lifestyle choices, such as smoking, or to other risks the public voluntarily assumes, like driving, may suggest to the public that you are being manipulative and trying to co-opt their decisions about what risks are acceptable. Risk communication practitioners have learned the hard way that relying on risk comparisons to overcome fears about exposure to radiological hazards can actually damage your credibility.



Risk comparisons work best when you're explaining risks to people with whom you've built some level of trust and understanding. Believing that your motives are well-intended, this audience is willing to accept your risk comparisons in good faith.

One way to look at the cancer risk from living near a nuclear power plant is to compare it to common safety or health measures. In one year, a home smoke detector results in a similar amount of radiation exposure (.008 millirem) as living within 50 miles of a normally functioning nuclear power plant (.01 millirem).

You can also use comparisons to put risks in perspective:

When comparing people's average annual exposures to radiation (based on an average annual exposure of 360 millirem from all natural and manmade sources), it may be significant to your audience that an individual receives about 200 millirem of radiation per year from naturally occurring radon gas, as compared to approximately 0.01 millirem for

people living within 50 miles of a normally functioning nuclear power plant.

Depict risk data graphically

Graphical materials can help communicate your message. Select a chart form, photograph, or illustration to reinforce your key information. Keep your graphical materials simple, easy to understand, and focused on the main point or message. Poorly designed charts overloaded with data and filled with acronyms or jargon do not contribute to an audience's understanding of your message.

When communicating about small probabilities, use graphical representations to illustrate how small a probability actually is.

Be “up-front” about uncertainty

When communicating with the public about the results of risk assessments, be honest about the inherent uncertainties. Risk assessment is not an exact science. While risk assessors use the best available data on what is occurring or could occur at the site, they are calculating the likelihood of different kinds of system or equipment failure and the likely consequences of such failures. The results are probabilities, not certainties. It is the NRC's policy that risk assessment be as realistic as possible; however, to offset the uncertainties and provide an extra margin of safety to the public, risk assessors may overestimate the risks. When explaining risk analyses, discuss the uncertainties that went into the risk assessment and say that the NRC took these uncertainties into account when using the results of the risk assessment. When communicating about uncertainties in knowledge about risks, address the following questions:

- What are the weaknesses of available data?
- What are the assumptions on which the estimates are based?
- How sensitive are the estimates to changes in assumptions?
- How sensitive is the decision to changes in the estimates?

When appropriate, you should also address what steps are being taken to decrease the amount of uncertainty. In situations where new information and analytical tools provide more realistic answers, you should explain how and why the results have changed.

Putting it all together

Packaging your response in a manner that is appropriate for your audience is as important as all the other information outlined in this chapter. The more complex the issue and more technical the information, the more important it is to speak clearly and directly to your audience's concerns. Here's an example of a way to respond to a question about risk associated with living near a power plant:

- Assume responsibility: "Our most important duty at the NRC is to maintain public health and safety. Everything we do is aimed at that one central theme."
- Acknowledge complexity: "We understand that the concerns of people living near a nuclear power facility touch on many issues, including the economic impacts on the community, waste transportation, radiation exposure, and safety from terrorist threats, among others."
- Give the bottom line: "Your health and safety are protected near a nuclear facility."
- Back it up: "Let me tell you why I can say this with such confidence." List two or three of the most important facts supporting your conclusion—redundant safety measures, regulatory policies, licensing requirements, state of the science in nuclear power, etc.
- Use visuals as backups: "Another way of looking at this is displayed on this chart...."

Things to Remember

- *While explaining the NRC's basis for evaluating risks is difficult, it is worth the effort because it affects the public's view of the agency's competence.*
- *Acknowledge and respect the public's emotional basis for judging risks.*
- *Help the public understand a specific risk in terms of plant features and regulatory controls that address the risk.*
- *Make technical data understandable with plain English. Avoid jargon and acronyms.*



- *Tailor the technical content of your message to meet the needs and desires of various stakeholders.*
- *Simplify numbers, use familiar units of measure, and transform scientific notation into concrete examples based on whole numbers.*
- *Be aware of the benefits and pitfalls of using risk comparisons.*
- *Simple charts and graphs, relevant photographs, and straightforward graphic illustrations can help you get your message across.*
- *Explain the uncertainties that go into risk assessments.*

Practice Tip

At the next meeting you attend where you do not have a major role (either public or internal), write down the questions that people are asking. Do they want more information about where the data came from? Do they want more information about the policy that is being applied? Try to address these types of questions in your next presentation.



7 Implementing Effective Two-Way Communication

How do I initiate meaningful dialogue with my stakeholders? How can I listen more effectively? How can I get the best out of my public meeting? Is there an appropriate role for the licensee?

Accept and involve the public as a legitimate partner

Members of the public have a right to participate in decisions that affect their lives. To build a foundation of trust with the public, communicators must be empathetic with the public's opinions, viewpoints, and concerns. Treat the public with genuine courtesy, patience, honesty, and fairness. Ongoing interactions with the public are crucial. Even though you may not think stakeholders are concerned, it is important to continue to repeat your message in as many formats and venues as possible. Public involvement is not a one-time occurrence; it is an ongoing part of public policy.



Be creative

Remember that there is more than one way to meet stakeholder needs. Resources available for risk communication vary over time and from issue to issue. Think of innovative ways to interact with stakeholders so you'll never be in a position of having to say "no" without providing an alternative. For example, a citizen's advisory board working on a decommissioning site might request attendance by an NRC representative at a monthly meeting. If you cannot commit to that schedule, you can still be responsive to the needs of the group by proposing to be there quarterly and by expressing the willingness to accommodate special requests on other occasions.

How to get the best out of your public meetings

- Consider the needs and habits of your stakeholders when setting and advertising meetings—For example, posting an announcement for a public meeting on a Web site may be inadequate if the majority of stakeholders look in the local newspaper for that kind of information. Find out by asking them where stakeholders prefer to get information (local paper, radio, TV, Web site, other?), what meeting locations are convenient for them (a local community building, a church, a government office?), and what times and days of the week are best. Be willing to accommodate their needs if you ask about them.
- Clearly define the role of the NRC (and distinguish it from the roles of other government agencies) at the beginning of public meetings.
- Be clear about how stakeholder input will impact the NRC's actions—Members of the public often feel that the NRC asks for their input but then fails to act on it. Invite input, set realistic expectations, and then be as specific as possible about how the public influenced the decision-making process. (Note: This last step is often forgotten.)
- Establish a clear point of contact—Designate a point of contact so that stakeholders can share their concerns. Make sure this contact is available by phone and in person.
- Take responsibility for intergovernmental coordination—Communicate with other government agencies before a meeting so that there are no surprises in front of the public.
- Anticipate questions—By studying your audience ahead of time, you can identify most of the questions they will ask. Plan your responses to general questions, as well as to specific inquiries.
- Listen—As an issue emerges, stakeholder input is critical. Stakeholders can provide you with excellent ideas, and their input can help determine the best way to communicate with them. When someone else is speaking, listen to what is being asked and pay attention to the body language and other signals that the audience is sending.
- Relax and be available at the end of a meeting—This is when many meaningful conversations take place. People see that you are willing to take the time to make certain everyone's questions are answered. It will probably feel uncomfortable

at first, but one-on-one interactions are beneficial.

- Ask people who didn't speak what their issues are. Do they have any questions? What did they think of the meeting?
- Acknowledge the frustration of people who expressed high levels of concern. Ask what other information you can provide.
- Remember you work for these people—be helpful, patient, and courteous.

How to Listen Effectively

Effective two-way communication with stakeholders requires more listening than speaking. Attentive listening promotes mutual understanding and can result in even greater information sharing. When you are tense, on the defensive, or thinking up a response before the other person stops speaking, you can't listen effectively. The following are some tips to help you be a better listener:

- Show attentiveness and interest by making eye contact and leaning forward slightly.
- Listen to understand the speaker's point of view, not necessarily to achieve agreement.
- Focus on the speaker's ideas, not on his or her personality.
- Do not argue with or interrupt the speaker.
- Validate emotions and messages. Rephrase the speaker's statements to convey what you understand, and invite the speaker to clarify his or her points if your summary missed the mark.
- Ask clarifying questions.

Beyond the public meeting—Informal ways to interact

Identify other opportunities to build relationships with stakeholders and establish the credibility of the NRC. Determining what is effective will depend on the need and resources available. Start small and work on building relationships one person or group at a time.

- Attend non-NRC community meetings (Kiwanis, Junior League, etc.) where you can be open to public questions and foster one-on-one conversations.
- Meet with the editorial boards of local newspapers, including critical ones.
- Pick up the phone and talk to local officials; let them know who you are and that you are available if they have any questions about a specific facility or the NRC.
- Seek out respected individuals or groups in the community who are interested in the process.
- Provide contact information and encourage the public to follow up with you.

- Set up an e-mail list to consistently communicate with many stakeholders simultaneously.

Is there an appropriate role for a licensee in NRC communication?

While it can be tricky and difficult, adequately addressing questions from the public about nuclear safety often requires information from both the NRC and the licensee because both have an important role to play. However, preserving the distinction between the regulator and the regulated needs to be a consideration. NRC employees have used the following approaches to balance this tension:

- Request that the licensee representatives come to public meetings early and stay late so that they are available to answer questions from the public.
- Have licensee representatives sit in the audience and have the moderator direct questions to them, when appropriate.
- Use informal contacts to encourage industry groups and specific licensees to communicate early and often.

Things to Remember

- *Be creative in using a mixture of formal and informal mechanisms for interacting with your stakeholders.*
- *Make sure the public is aware of the various avenues for providing input to the NRC.*
- *Involve licensees in interactions with the public, making certain to preserve the distinction between the regulator and the regulated.*

Practice Tip

Be a member of the public. Take a different perspective and go observe a community meeting near your home. A lot can be learned from watching how others facilitate meetings. Pay attention to your own reactions to what is being discussed and the process that is being used. To what extent were your concerns addressed? What nonverbal signals are sent by the officials running the meeting?



8 Countering Misinformation and Misperceptions

How do I provide accurate information without becoming an advocate?

When members of the public, interveners, and reporters state inaccurate information as fact, NRC staff worry that, by providing the correct information, they may be perceived as advocates. Yet, by not speaking up, the NRC gives the impression that the misinformation is true. This silence hinders good decision making about risk. Some simple ways to respond when you hear or read incorrect information include the following.

In the media:

- Write a letter to the editor.
- Meet with the editorial board.
- Provide credible, third-party sources of information that will confirm the facts.

Note: Check with the Office of Public Affairs about the best approach to use with the media.

At a public meeting or in other direct interactions:

- Refute the misinformation succinctly.
- Don't repeat the misinformation.
- Don't use words or phrases that have a negative association, like, "This is not another Three Mile Island situation."
- Don't be confrontational.
 - One good way to avoid confrontation is to ask for clarification, which may enable you to better tailor your correction to the specific misconception: "Could you explain to me

Help from External Researchers



In a study conducted in Florida, a researcher reported findings of radiation in the baby teeth collected from youngsters in an area surrounding a nuclear power plant. The findings were widely reported in the media and caused great public concern and furor regarding the power plant. Eventually non-NRC researchers were able to debunk the study based on its poor science and overcome the misinformation and misperceptions.

your concern about the red inspection finding and how that affects your commute to work?"

- It is also helpful to agree on some point: "If I had read that article, I would be concerned too. What may not have been clear is that...."
- Be proactive.
 - Have information exhibits about the NRC at public meetings or other venues.
 - Prepare questions and answers that address common misperceptions or inaccurate information. These can be made available at public meetings and on the Web site.

Don't confuse different perspectives with incorrect information

People may cite incorrect information for a variety of reasons. It could be a way to discredit you intentionally or merely an innocent lack of understanding. It also may be that someone understands what you're saying, but simply doesn't agree. The public, interveners, and the media come from different perspectives that may alter their perceptions. Even providing the information you consider to be completely and technically accurate may not change their points of view.

Sample responses to statements based on misinformation or misperceptions

NRC staff often hear comments such as "If it weren't for the nuclear power plant, I wouldn't be exposed to radiation. I want zero risk." Or "The nuclear facility causes cancer." Both of these assertions are based on assumptions that are not technically accurate. If you don't offer an alternative point of view, your silence could be viewed as tacit agreement, which could grow into even greater misunderstandings. Employing the suggestions above, here are possible ways to respond to these comments. These are not one-size-fits-all samples. The responses you give to similar comments must be tailored to the specific situation.

Q: *"I want zero risk."*

A: "It is impossible to eliminate all radiation in the environment. We are all surrounded by a small amount of what is called 'background radiation' that comes from natural sources such as the sun and radon in the ground, manmade sources such as medical

X rays, consumer products such as glow-in-the-dark watches, and even some foods such as bananas. The amount of radiation released to the environment from a nuclear power plant is less than 1 percent of the radiation exposure everyone receives from naturally occurring radiation.”

Q: “*The facility causes cancer.*”

A: “Cancer is a scary disease, and medical scientists still need to learn a lot about its causes. Research shows that radiation is a relatively weak cause of cancer. A person spending a full year at a nuclear plant boundary would receive an additional radiation exposure of less than 1 percent of the radiation exposure everyone receives from naturally occurring radiation.”

Use teaching techniques to counter persistent misperceptions

When significant misconceptions exist, it is necessary to do more than simply provide the correct information. In these cases, you must address the logic of the misconception directly, using the following steps:

- Acknowledge that the audience’s misconception or logic is plausible.

Examples: “Since testing is a good thing, it is natural to believe that more testing is always better.” Or “When the parts of a nuclear power plant that are determined to be critical for maintaining safety are degraded, the plant is required to go into shutdown. It is reasonable to assume that safety can be maximized by shutting down the plant whenever there is a question of degraded equipment.”

- Point out why the audience’s view may be inaccurate or incomplete.

Examples: “Testing effort is sometimes wasted on components that are not very important to risk.” Or “The process of putting a nuclear power plant into shutdown mode also has risks associated it, including....”

- Present a correct explanation, and provide information that corrects or addresses the audience’s original concern while presenting your point accurately.

Examples: “Doing better at focusing testing efforts on the components that are most important to risk can improve safety while reducing the total testing effort.” Or “The NRC is able to

make a decision that maximizes safety by considering both the risks associated with allowing the power plant to operate while repairs or other corrective actions are being made and the risks associated with shutdown.”

More tips for addressing misinformation can be found in the next section, “Answering Difficult Questions.”

Things to Remember



- *Addressing misinformation and misperceptions is better than staying silent on the issue.*
- *Even when you provide information that you believe is more accurate, you may not change someone else’s point of view.*

Practice Tip



Practice responding to the following statements:

- *“The NRC wants to build another nuclear power plant in our town.”*
- *“Some day the plant will just blow up.”*
- *“I have a greater chance of getting cancer if nuclear waste is carried on trucks that use the highway near my house.”*

9 Answering Difficult Questions

How do I handle the really tough questions?

The most important thing to remember when answering any type of question is that *all of your answers should always be truthful*. The effectiveness of your message depends on how your audience perceives you, as well as what you say. Your personal credibility and the way you deliver responses affects how your message is received, no matter how honest it is.

Some tips for using the seven steps for responding to difficult questions

1. Don't interrupt questioners when they are venting—It makes them even more upset.
2. Listen and watch for indications of underlying issues.
3. Match the level of empathy to the level of concern expressed by the questioner—Showing empathy is not agreeing.
4. Use messages to develop conclusions—Practice stating conclusions before facts because it takes some getting used to.
5. Provide two or three supporting facts for your conclusion.
6. Repeat conclusions verbatim to assist with stakeholder understanding.
7. Tell them what you are and will be doing to resolve the issue—People want to know you are committed for the long term.

Seven Steps for Responding to Difficult Questions

1. Allow venting
2. Determine the underlying concern
3. Express empathy
4. Deliver your conclusion
5. Provide supporting facts
6. Repeat conclusion exactly as stated before
7. Provide future action

Handling different types of difficult questions

Fairness—“Why does the NRC require sites to clean up only to 25 millirem per year, but EPA requires them to clean up more thoroughly to 15 millirem per year?”

- Acknowledge the questioner's concern and the complexity of the issue.

- Avoid evaluating the stakeholder’s perception of what is fair.
- Emphasize the NRC’s commitment to fairness and equal protection of public health and safety past, present, and future.
- Respond to the specifics of the question, for example, “The NRC and EPA use different standards because....”

Highly technical or scientific—“What process is used to determine risk?”

- Speak to the audience—Do not talk down or use dehumanizing terms.
- Summarize and rephrase highly technical questions in simple terms.
- Make the numbers understandable, for example, “The term ‘10 to the minus 6’ is a mathematical expression of the likelihood that something will happen....”
- Use well-designed analogies to illustrate key points.
- Use graphics or other visual aids to provide context.
- Complex information takes time to convey—Slow down, repeat key pieces of information, and summarize succinctly.
- Provide future action by indicating willingness to continue the dialogue after the meeting or provide additional information.

Guarantee—“Can you guarantee that this plant is safe?”

- Avoid making statements such as “I cannot guarantee...” or “There are no guarantees in life.” Though the public truly understands there are no guarantees, statements like these contribute to public outrage because they reinforce feelings of helplessness and lack of individual control.
- Guarantee what you can from a personal perspective, for example, “What I can guarantee you is I am committed to protecting the health and safety of everyone living in this town....”

False premise (containing incorrect information)—“I heard that a plant out in Illinois blew up. Could that happen here?”

- Convey understanding of the seriousness of the concern.

- Identify and correct any information that is wrong: “I too would be very concerned if any nuclear plant in Illinois or any anywhere else blew up. The fact is that all plants are functioning safely. There has been no accident or explosion.”
- Emphasize prevention measures to “keep it from happening here.”

Speculative—“What if there was an accident while the radioactive waste was being transported and my family got sick?”

- It is not useful to speculate about things that have not happened—Stick to the present and the relevant facts.
- Express commitment to safety by emphasizing ongoing actions to protect public health and safety and prevent accidents.
- Address the underlying concerns—In this example, some underlying issues are about medical care and benefits for the sick and injured: “I recognize the seriousness of your example. That’s why we regulate so many safeguards into the nuclear industry—to prevent your family from ever getting sick. We’re committed to helping families with....”

Loaded or set up (including multipart questions and negative allegations)—“Why should I believe anything you say? You are from the government.”

- The government does lack credibility with many members of the public. You can overcome organizational credibility with your individual credibility. Acknowledge past mistakes. Focus on the present and future.
- When faced with multipart questions, separate the issues and address them one at a time: “I’ll start by addressing your third point....”

Take responsibility for lack of understanding

As you respond to questions, ask clarifying questions to make sure that you understand what is being asked or whether you provided the answer. Some ways to ask for clarification include the following:

- “I am not sure I completely understand. Could you tell me a little more about ...?”
- “Before I answer your question, I want to make sure that I understand completely what you are asking. (Restate the question in your own words.)”

- “Did I answer your question?”
- “Is this the information you were looking for?”

Always take responsibility for a lack of understanding. Implying that the people asking questions are not being clear will make them angry.

It is OK to say, “I don’t know”

Don’t be afraid to say, “I don’t know,” but be prepared to find out the answer and always follow through on your promises. The real key is to use preparation and planning to avoid too many “I don’t know.” The process starts with knowing and understanding your stakeholders and their issues/concerns. Compile lists of anticipated questions and responses prior to meeting with stakeholders. Summaries of previous meetings, results from stakeholder surveys, and information gained by speaking with other members of the NRC staff will help you develop a comprehensive list of questions. The more thorough the research and preparation, the less you’ll have to say, “I don’t know.”

Anticipating difficult questions

When preparing for meetings or writing documents that could raise sensitive, controversial, and emotional questions, use the following tips:

- Review after-action reports or summaries from previous public meetings on the same topic.
- Seek out other NRC employees who have recent experience conducting public meetings on or responding to the same or similar topics. Ask them what the most difficult questions were and how they responded.
- Reporters often use controversial questions as the basis for news reports. Analyze the content of several media articles about the situation you face. Identify common themes and areas of contention as outlined by the reporters. Analyze the effectiveness of NRC responses and modify as appropriate for maximum effectiveness. Be sure to state your modifications in accordance with NRC procedures.
- Explain the situation to non-NRC colleagues. Ask them to identify questions they would ask if they attended the meeting.

Things to Remember

- *The best approach for dealing with difficult questions is to be prepared and to practice.*
- *Know what your key messages are (see “Crafting Effective Messages,” Chapter 5).*
- *Make a list of possible questions that you may be asked and how you plan to respond to them.*
- *Be prepared to answer questions that are not in your area of expertise.*



Practice Tip

Using the suggestions from “Anticipating difficult questions” in this chapter, make a list of difficult questions you anticipate may arise in future meetings. Write a few notes to help you answer each one. Use the Seven-Step Guide to help you package the responses for maximum effectiveness. Practice answering them with a coworker.



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10 Handling Confrontation

How do I deal with angry stakeholders? How do I use a facilitator?

Public meetings can erupt into controversy, especially when participants feel worried or threatened by an issue. Sometimes members of the public verbally attack meeting leaders and company representatives. If a meeting involves controversial topics and is likely to escalate to hostility, it may be wise to use a facilitator.

While it is difficult to cope with confrontations, it is important to remember that not all conflict is bad. Conflict plays an important role in change and helps people reach lasting solutions. If dealt with constructively, conflict can lead to meaningful relationships and greater benefits for all parties.

Sources of Anger

- Fear
- Threat to self
- Threat to family
- Frustration
- Feeling powerless
- Feeling disrespected
- Feeling ignored

Tips for managing conflict

What can I do personally?

- Allow venting and expression of emotions.
- Remain respectful at all times.
- Do not respond to verbal attacks with emotional retorts. Remain calm.
- Show willingness to listen to concerns and grievances.
- Initiate personal contact before and after meetings.
- Apologize when appropriate.
- Acknowledge past mistakes or problems.

What can I do to prepare for meetings?

- Anticipate questions and concerns.
- Contact local officials before meetings to gauge issues and mood.
- Contact interveners and public interest groups ahead of time to find out their positions.

- Provide participants with complete information about the meeting objectives and structure so they understand the process and can contribute.
- Seek assistance from a risk communication or conflict resolution specialist to help with planning and implementation.

What can I do regarding meeting process/structure?

- Choose spokespersons carefully—Not all NRC employees are comfortable leading meetings, so it is important to choose representatives best suited for interactive situations.
- If necessary, delegate meeting leadership to a third-party facilitator.
- Provide structured time for interaction with participants—Allow time for Q&A sessions not only at the end but also during meetings.

What is a facilitator?

A facilitator is a trained specialist who acts as meeting leader. Facilitators are impartial to outcomes and act on behalf of all participants. They run meetings so that all participants feel safe and respected, making it possible to consider new ideas and solutions. Independent, third-party facilitators are effective, especially if the community knows them. It is also possible to cultivate facilitators in house. With proper training, in-house facilitators can provide fair, balanced mediation for public meetings.

When do I need a facilitator?

If a meeting is likely to become controversial or hostile, consider using a facilitator. In hostile situations people often argue over who should run the meeting, how it should be run, and what should be on the agenda. Intervener groups may try to dominate the meeting, disrupting or discouraging open discussion. A facilitator helps a group overcome these issues and creates the opportunity for everyone to contribute and voice concerns.

What does a facilitator do?

- Assists with meeting planning and design—Suggests meeting formats that avoid controversy and effectively address issues.
- Keeps meetings focused and on track—Regulates how long people speak, limits accusations and emotional outbursts, and redirects discussions.

- Clarifies questions and comments—Ensures that everyone feels understood by repeating and summarizing comments.
- Acknowledges feelings—Creates an environment where it is safe for participants to express their feelings without jeopardizing communication between parties.
- States problems in constructive ways—Restates comments to remove blame.
- Suggests procedures and problem-solving steps—Proposes solutions to help parties work together more effectively.
- Senses agreement—Gauges and verifies when participants reach an agreement.

Considering security at public meetings

Effective dialogue with the public requires interactive discussion, mutual respect, and an atmosphere conducive to expression. Hostile public meetings DO NOT foster this type of environment. Before moving forward with a public meeting at which you believe that security might be necessary, first consider some alternatives (e.g., meet in smaller group settings, allow a cooldown period prior to the public meeting, set up an open house as opposed to traditional town hall-style meetings).

If a public meeting must be held, enlist the help of a facilitator or conflict resolution specialist to prepare for and run the meeting. Together, discuss possible scenarios in advance and decide what to do if these situations arise. Ask yourselves the following questions:

- How will we handle disruptive participants?
- When and how do we call for backup?
- Under what circumstances do we end a meeting?
- Have we coordinated with local law enforcement in advance?
- How will we use security if we need to?
- Have we had security awareness training ranging from diffusing a hostile situation to responding to a dangerous situation?

Things to Remember



- *Conflict can be a good thing. It provides opportunities for meaningful relationships and mutually acceptable solutions.*
- *You can anticipate many problems and issues before meetings. Preparation will help reduce confrontations.*
- *Not all people are suited to be spokespersons. Choose spokespersons for public meetings and forums carefully.*
- *Using a facilitator may be advisable if a public meeting involves controversy or is likely to attract a hostile audience.*
- *It is important to remain considerate and open to communication, even if you are attacked verbally.*

Practice Tip



When confronted by a hostile group or member of the public, it is important to understand the sources behind that group's or person's anger.

To help empathize with your stakeholders, think of the last time you were angry over an issue or problem:

- *What was the source of your anger? Did you feel threatened? Frustrated? Ignored?*
- *How did you respond to your feelings? Did you confront the source? Did you lash out?*
- *If you were placed in the same situation again, what would make you feel better?*

11 Evaluating the Effectiveness of Risk Communication

**Am I being effective?
How can I improve?**

Doing your homework continues even after you have planned your risk communication approach and have begun implementing it. Throughout the process you will need to actively gather feedback on the needs of your stakeholders and how well you are meeting them. No matter how you decide to evaluate and measure your risk communication effort, it's important to remember not to wait until the end.

Be creative—Look for simple, readily available methods for gathering the information you need

Evaluation efforts do not need to be formalized. Simple methods exist that will help you to evaluate your efforts.

Read the newspaper

The extent and tone of press coverage can provide a great deal of information about how effective your risk communication efforts have been and what new challenges you might face. Were NRC events or press releases covered? Did the coverage include the information that the NRC was trying to disseminate? How was the NRC portrayed?

Have a designated observer at a meeting

Ask colleagues to observe you in action at a public meeting. They can provide you with specific feedback about what you said and how people responded. What questions are people asking? What nonverbal signals were participants sending at various points in the meeting?

Ask stakeholders what they think

Even the most critical stakeholders can often provide constructive feedback on the risk communication process when asked. This can be done at the close of the formal meeting or during breaks. Ask

Myths about Evaluation

Wipe these myths out of your thinking:

- Evaluation is expensive.
- It can be done only at the end of a project.
- It is time consuming.
- It is complicated.
- It is unnecessary.

people, “What did you think? Were the location and time appropriate? Is there additional information you would like to have? How did this meeting compare to others you have attended? What would have made it better?”

Be realistic about what successful risk communication looks and feels like

“When the media publishes the NRC’s talking points and messages and people refer to them for decision making, that’s success.”

NRC Staff Member

Risk communication is not about everyone coming to agreement. Your stakeholders may not agree with your position, but they will respect you for having listened to their concerns.

Effective risk communication does not mean that you will avoid all contentious communication situations. It will, however, increase your

credibility with your stakeholders, leading to improved relationships and more accurate understanding on all sides.

Evaluation criteria to consider:

- Did the risk information or message reach the target audience?
- Did the target audience understand the information or message?
- Do you understand your target audience’s perspectives of the issue?
- Has there been a change in media coverage, the types of questions asked, or the level of participation?

Things to Remember

- *There are inexpensive and uncomplicated ways to evaluate your effectiveness.*
- *Incorporate simple but creative evaluation methods throughout the risk communication process.*
- *Measure success based on whether you reach your audience and whether you understand each other's points of view.*

Practice Tip

- *Volunteer to observe a colleague at a public meeting and provide feedback.*
- *Select an issue in the public eye, and track how the media reporting changes on it over time. What contributed to those changes?*



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12 Addressing Security Concerns

How do I talk about security issues without compromising security?

Although the task is challenging, you can positively and effectively communicate with the public about security

Life changed in the United States after September 11, 2001. Security has become a part of everyday life, and most of us are more security conscious. We are more aware of potential terrorist threats, we have beliefs or opinions on the risks posed by possible terrorist actions, and we see increased security as we go about everyday activities. Government officials have publicly stated their concerns that nuclear facilities could be a target for terrorist attack. It is not surprising that there has been an increase in public concern and anxiety related to the security of nuclear facilities. The public raises concerns about security at every opportunity, not just at meetings specifically addressing security issues. People want to know how safety and security of nuclear facilities, the electrical grid, and spent fuel storage and transportation are being assured, given the potential for terrorist attacks. The NRC must be prepared to positively and effectively communicate with a wide range of stakeholders about security.

In its simplest terms, the challenge related to risk communication about security is to create an environment of trust and confidence among all stakeholders in a situation where not all information can be disclosed. In some ways this situation is contrary to many basic and accepted risk communication principles. However, there are ways to meet this challenge. The tips that follow provide some basic but important risk communication principles especially adapted to communicating about security-related concerns.

“After 9-11 we expanded our viewpoints to include security events. It isn’t easy to talk about the probabilities of these kinds of events.”

Licensee

Be prepared

Before interacting with a group of stakeholders via a meeting or writing a document, anticipate their security-related concerns and questions. Consult with an NRC expert in advance to help prepare your responses.

- Consult with the Office of Nuclear Security and Incident Response and the Office of Research to see whether there is ongoing work pertaining to your issue.
- Consider what security issues are most likely to be raised.
- Decide how you will respond to these concerns.
- As the NRC develops perspectives through research or other means, talking points and communication plans should be developed that can be used by other NRC staff to communicate to the public.

Say what you can and can't say

One of the basic principles of risk communication is establishing trust and credibility. Most things are possible if you're trusted and viewed as a credible source of information. Because not all information related to security can be shared openly, consider a couple of guidelines to help you create and maintain trust and credibility.

- Clearly establish what information can be shared and what can't. For example, you can share information that additional armed security personnel, new equipment, and upgraded procedures have been put in place, but specifics cannot be disclosed.
- Clearly state why you can't tell the public detailed security information. Because the public is keenly aware of security concerns, most will understand and respect the need to keep certain information classified.
- Maintenance of trust and credibility means never giving the public a reason to be concerned that information was not disclosed for any other reason than security.

Understand the public's perspective

Effective risk communication requires understanding and valuing people's perceptions of risk. People have very real worries about their safety and security. Security concerns are different from and in a way more complex than concerns about safety. First, terrorist threats offer more unknowns. Second, safety systems are usually designed as protection from accidents. In contrast, security systems are designed to prevent intentional incidents. The public understands and is concerned that a terrorist is actually intent on breaching designed nuclear safety systems.

Use third parties

Credible, nonaligned security experts can help establish public trust and confidence in your security program. Ask them to share their perspectives and to assure the public that effective security systems are in place.

Build effective messages

When security information is withheld from the public, the public is forced to give up some control. Related to security, when people have to give up control, they want to be reassured that they can trust the NRC, that the NRC is committed to security, and that the NRC cares about them. The NRC must be able to offer these assurances through a variety of media and venues. If the NRC can answer these questions through words, actions, and deeds, the public will be more accepting of limits in information sharing.

A Security Story

Stating something as technical fact, even when correct, might leave an impression of dismissing people's concerns. The message that terrorism is not a significant challenge to the NRC's emergency preparedness, although technically accurate, may be upsetting to some because it may appear to minimize the potential consequences of the issue and it does not adequately differentiate between and address security versus safety concerns. NRC staff can use an understanding of risk communication principles and the special concerns many people have about security and nuclear facilities to respond more effectively. First, avoid creating the impression that NRC does not consider terrorism a significant security/safety issue. Second, develop messages emphasizing the work that the NRC is doing to understand and address the threats introduced by terrorism. Also convey that nuclear power plants are built to withstand large impacts and have mitigation systems in place, including emergency planning and response, to defend against potential terrorist attacks, manage any release, and minimize the impact on public health and safety.

Can I trust the NRC?

Without disclosing classified information, demonstrate proven past performance on security issues. Communicate mistakes and talk about lessons learned.

Is the NRC committed to security?

The NRC must explain its role in protecting public health and safety and educate the public on its security goals and values. The NRC must prove its commitment to the public's security. It is important to be forthcoming about what has changed since 9-11 as well as what was already in place. Explain what security measures have been in place for decades and what new ones, such as the Office of Nuclear Security and Incidence Response, are being imple-

mented to increase safety and security. Be clear that the NRC has implemented measures to defend against terrorist threats.

Does the NRC care about me?

The NRC must understand and value the public's concerns by articulating the public's concerns about terrorist threats as well or better than the public can. Post 9-11, people who live near power plants or other nuclear facilities have a different sense of the risks they are asked to bear on behalf of the rest of the country. The NRC needs to convey the message that these people will be protected.

Sample Questions & Answers:

Q: What has the NRC done to increase security since September 11, 2001?

A: Since September 11, 2001, the NRC has ordered its major licensees to increase patrols, augment security forces and capabilities, increase the number of security posts, install additional physical barriers, check vehicles entering the site at checkpoints farther from important structures, enhance coordination with law enforcement and military authorities, and institute more restrictive site access controls. The NRC evaluates implementation of the increased security measures through on-site inspections. In addition, the NRC has issued orders on access authorization, fatigue, guard training and qualification, and the revised design basis threat. The NRC continues to work closely with the appropriate federal agencies to enhance aviation security and thereby the security of nuclear power plants and other NRC-licensed facilities.

Q: What has the NRC done to protect spent fuel pools from a terrorist attack?

A: Nuclear power reactor spent fuel pools are robust structures similar in size to large swimming pools and constructed of at least 6-foot-thick, reinforced-concrete walls with stainless steel liners. Many pools are further protected by surrounding structures or are located underground. Since September 11, 2001, additional measures have been taken to reduce the likelihood of a terrorist attack and to further improve the existing capabilities of nuclear plants to withstand an attack. These measures include specific enhancements associated with protective strategies for ground attacks on spent fuel pools, the addition of physical barriers to accessing the pools, contingency plans, and planned security responses to attempted sabotage. Furthermore, the NRC has been

coordinating with other federal agencies to reduce the opportunity for terrorists to act against nuclear facilities.

Q: How would the transportation of radioactive materials be affected by a terrorist attack?

“If you deal with classified information, you need to be open and up-front that you can’t provide certain kinds of information and explain why.”

Risk communication consultant

A: Over the past 30 years, thousands of shipments of commercially generated spent fuel have been made throughout the United States without any radiological releases to the environment or harm to the public. Very radioactive material like spent nuclear fuel is transported in “Type B” casks. Type B packages may have 10 inches of lead shielding to protect the environment from radiation and may weigh a ton. They are certified by the NRC to withstand severe accident conditions, including a drop of 30 feet onto an unyielding surface, a drop onto a metal pin 6 inches in diameter, an engulfing fire at 1,480°F that lasts 30 minutes, and immersion in water for 8 hours, as well as conditions of normal transportation. “Withstanding” these conditions means that the container will not release more than the allowed amount of its radioactive contents. After September 11, 2001, the NRC ordered licensees to increase security in the transportation of specific types of radioactive materials, including spent fuel shipments.

Things to Remember

- *Consult with the Office of Nuclear Security and Incident Response and the Office of Research to see whether there is ongoing work pertaining to your issue.*
- *Understand where your stakeholders are coming from.*
- *Say what you can. Say what you can’t. Be up-front about both.*
- *Use third parties when appropriate.*
- *Build and use effective messages.*
 - *Demonstrate that the NRC can be trusted.*
 - *Demonstrate that the NRC is committed to security.*
 - *Demonstrate that the NRC cares about people.*



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13 Communicating in a Crisis

Are there special risk communication concerns during a crisis?

Communicating NRC risk information in the context of a crisis has its own challenges. The NRC may be involved in a range of crisis scenarios from low level to maximum intensity. The degree or intensity and longevity of a crisis will affect required resources, manpower, and operations hours. It will be important to quickly recognize what is occurring and respond in a timely manner. Potential NRC crisis scenarios include the following:

- radiation release at a power plant,
- medical overdose,
- terrorist attack on a nuclear facility,
- actual or alleged misconduct by a high-level NRC official, and
- release of a research report or study that is critical of an NRC action or policy.

Understand how the dynamics between risk analysis, risk management, and the public change in a crisis situation

Risk communication is the link between risk analysis, risk management, and the public. In a crisis, the relationship between each is shaken:

- The public has heightened concern about its safety and often questions the ability of the NRC.
- Decision makers are under pressure for immediate answers from many sides.
- Risk analysts are asked to provide answers in a compressed time period but are stuck with the same analytical tools and processes that were developed to function under normal conditions.

Risk communication is a critical component of crisis communication

Application of risk communication practices is critical for any member of the NRC staff who interacts with stakeholders about a

crisis situation. Senior managers, public affairs personnel, on-scene responders, and others who potentially face the media, the general public, or other key stakeholders must establish trust and credibility in a relatively short period to provide believable information and convey NRC messages credibly. Stakeholders are far more forgiving if you reach out to them and openly share information in the face of a crisis, even if some information must be corrected at a later date. If you close up and leave information voids, the public and especially the news media will fill the gaps with speculative information or material they've received from those who advocate against the NRC.



Do

- Deliver accurate and timely information to stakeholders early and often.
- Provide the details you know and inform the media and other stakeholders when you expect to have additional information.
- Follow up—Credibility is at stake.
- Select the right spokespersons and prepare them.
- Ensure that spokespersons express empathy and concern for those affected by the crisis.
- Convey the NRC's commitment to public safety and prevention of (further) harm.
- Share information internally—NRC staff will want to know about the situation and are a great resource to convey reliable information and key messages to others.
- Accommodate the information needs of the media.
- Acknowledge uncertainty.
- Collaborate with key stakeholders and understand their information needs and concerns.
- In a crisis involving public health or safety, provide information people can use to exercise some measure of control over the situation.
- Apply the risk communication lessons from previous chapters of these guidelines.

Don't

- Speculate about the situation.
- Blame the media—Controversy, negative information, and drama are the essence of their business.
- Fail to see the crisis situation from the perspective of those who are affected.

Things to Remember

- *Recognize crisis situations quickly, and respond in a timely manner.*
- *Apply risk communication principles during crisis situations to establish trust and credibility.*



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14 Overcoming Common Challenges

What else do I need to know to successfully communicate about risk?

Here are some additional challenges, pitfalls, and misconceptions you will face in risk communication, along with ways to overcome them.

Special challenges of being an NRC risk communicator include the following:

- An issue that expands beyond the NRC's responsibility. If the NRC holds a meeting about a safety issue that may raise broader emergency response concerns, involve FEMA and the state emergency management agency. The NRC can increase public trust by anticipating likely questions—even those outside the NRC's purview—and having the right agencies there to respond. Within reason, you also should prepare for questions that fall within the responsibility of other NRC offices.
- Disagreements within the NRC. If stakeholders detect disagreement within the agency, the NRC's credibility will be damaged. There are times, however, when it is necessary to meet with the public before technical debate on an issue is resolved within the NRC. In this situation, managers and analysts should work together to provide preliminary results that are communicated within this context. Your message could include statements such as the following:
 - "Here is what we know now."
 - "Here are some of the uncertainties in this information we are currently trying to address."
 - "These issues are complex, and it is our responsibility to get the answer right. It takes time; however, we will continue to update you as the process proceeds."
- Public access to outdated risk studies that no longer reflect the current state of knowledge. The NRC makes many of its documents available to the public through the Web site. When making documents available to the public, make it clear that new information and research may supersede or enhance the report. In cases where the NRC has updated the data, analysis,

or its policy on an issue, links or other notations should be included to point Web users to the most current information. Written and oral communications should highlight changes, and key messages should be developed that show how ongoing research is used to inform the current decision-making process.

- Balancing the communication goals of different NRC elements. For example, public affairs is concerned about accurate and timely messages for the media, Congressional affairs needs to be responsive to concerned representatives and senators, and the NRC general counsel examines messages to ensure they comply with legal constraints. All these elements need to be involved in crafting accurate, timely, and legally protective messages responsive to multiple goals.
- Understanding the limits your management places on you, and working within these limits or changing them.

Following are some common pitfalls along the road to good risk communication:

- Doing risk communication for the wrong reasons—Risk communication won't work if your reason for doing it is only to satisfy regulations or because it's the "in" thing to do. You need to match your risk communication activities to the situation.
- Picking a technique before you've decided on the goal of risk communication—Understand the goal of communication before trying to build messages.
- Ignoring the big issues—Be proactive in recognizing and responding to potential hot-button issues.
- Adopting an attitude that the public interprets as arrogant, patronizing, condescending, uncaring, or defensive—These qualities turn off the public and prevent them from hearing your message.
- Using body language that belies the message of your words—Try to avoid obviously negative nonverbals, such as rolling eyes, clenched fists, hands on hips, slouching, or an overly rigid posture.
- Using jargon—It is easy to slip into jargon when talking to the public because that's how the NRC talks internally and to licensees.

Here are some misconceptions that can derail a risk communication program:

Misconceptions	Corrections
Risk communication is not my job.	Everyone has a role in communicating how the NRC is regulating nuclear power to safeguard the public and the environment.
Risk communication just riles people up.	People may be upset, but risk communication gives them an opportunity to air their concerns and be assured that the NRC cares about their perspectives on risk.
Risk communication slows down progress.	The NRC needs to take the time to inform the public of issues that affect them. It's the democratic way. Plus, there are times that an ignored public slows things down even further.
The facts speak for themselves.	You will need to interpret scientific findings to enhance the technical understanding of a broad range of stakeholders.
Nobody is complaining, so everything is okay.	Don't assume that everyone understands the issues and is happy about what the NRC is doing just because you haven't heard any negative reports.
We're the experts, so people will agree with our recommendation.	The public often times doesn't accept the NRC as an expert. The risk communication challenge is convincing them otherwise.
Communication is less important than education.	Just because stakeholders may understand that a risk is low doesn't mean that they voluntarily accept that risk.

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