

## CHAPTER

# 6 Communication

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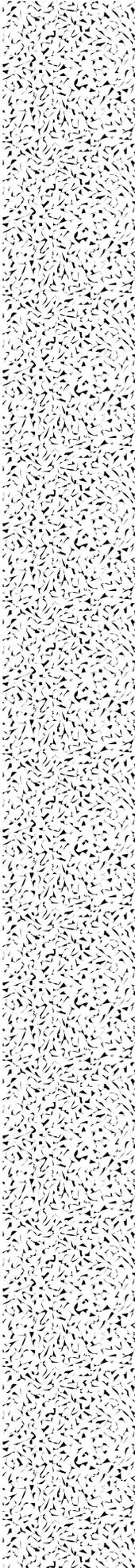
This chapter provides some basic guidelines for communicating information about landfill gas issues. People who live or work near a landfill may pose a variety of questions and concerns to local or state environmental health professionals about landfill gas. For example:

- What is that odor coming from the landfill? Will it make me or my children sick?
- Will air emissions from the landfill contaminate nearby homes and schools?
- Can explosive gases travel from the landfill to basements of neighboring homes?
- I grew up next to a landfill. Am I likely to get cancer or some other illness?
- Are there more health problems in this community because of the landfill?
- How do I know if landfill gas is entering my home or other buildings?
- What are you doing about this problem?

Over the last decade, an extensive body of research has addressed the best ways for environmental health professionals to respond to community members asking questions such as these. ATSDR has drawn from this work to assemble a *Primer on Health Risk Communication and Practices* and *An Evaluation Primer on Health Risk Communication Programs and Outcomes*. Both of these resources are available on the Internet (see the end of this chapter for Web sites and other reference information). This chapter draws from these primers and other resources to help you respond to community concerns and develop a proactive approach to communicating with community members about landfill gas issues. Appendix E provides some examples of fact sheets and newsletters produced to help communicate with community members to address their concerns.

### **Basic Guidelines for Health Risk Communication**

The goal of risk communication should be to promote development of an informed public that is involved, reasonable, thoughtful, solution-oriented, and collaborative. The basic guidelines (adapted from EPA 1992 and 1991; Chess et al. 1988) described below for achieving this goal might appear to be simple common sense, but they are often ignored. When this happens, the consequences can be severe, as illustrated by the case study on the West Covina dump, described later in this chapter. Putting the following guidelines into practice can greatly improve efforts to communicate with the public.



***Accept and involve the public as a partner.*** Effective communication about landfill gas issues depends on developing and maintaining an ongoing relationship with those who live and work near the landfill. In other words, good communication is neither a one-way nor a one-time transmission of information; it involves listening to community members, responding to their concerns, involving them in providing input, and, to the extent possible, involving the community in investigating the problem and devising solutions. Community involvement is key for a number of reasons:

- People are entitled to participate in decisions about issues that directly affect their lives.
- Input from the community can help your agency make better decisions and streamline your efforts.
- Involvement in the process leads to greater understanding of—and more appropriate reaction to—a particular risk.
- Those who are affected by a problem bring different variables and viewpoints to the problem-solving equation.
- Cooperation increases credibility and support.
- Battles that erode public confidence and agency resources are more likely when community input is not sought or considered.

Basic guidelines for involving the public include:

- Involve the community and all other parties that have an interest in the issue at the earliest stage possible. Keep in mind that you work for the public and that the public can make or break your initiatives.
- Clarify the public’s role from the outset.
- Clarify your agency’s limitations and range of activities early on.
- Acknowledge situations where the agency can give the community only limited say in how to proceed.
- Learn from the communities what type of involvement they prefer. For example, at the Danbury landfill, described later in this chapter, officials expanded the landfill closure plans in response to citizen concerns and involved a local citizens group in the monitoring, selection of closure options, and other aspects of the landfill.

***Identify and respond to the community’s specific concerns and needs.*** A community consists of a mosaic of diverse “publics” with different needs and interests. These publics may include, for example, communities from different neighborhoods or towns, activists, health care providers, elected officials, and so on. One of the most important steps in effective communication is to identify and get to know these various publics by providing opportunities for dialogue and exchange. This can be done in a number of ways, including holding meetings and availability sessions during which the public can meet one-on-one with agency representatives, meeting with representatives of various groups, and providing hotlines or Web sites through which community members can express concerns. The goals of these interactions is to begin building relationships and trust with community members, to listen to and fully understand their needs and concerns, to learn what the community already knows and what they want to know about the landfill, and to learn when and how the community would like to be communicated with.

Guidelines for identifying community concerns include:

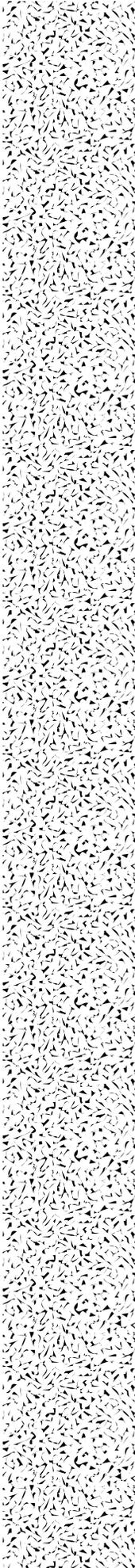
- Do not make assumptions about what people know, think, or want done. Take the time to find out what people are thinking by letting all parties with an interest in the issue be heard.
- Try to identify the various interests in a situation at the beginning and meet with representatives of each interest informally.
- Make sure all affected groups are represented.
- Recognize the strengths and weaknesses of citizen advisory groups.
- Deal with everybody equally and fairly.
- Find out from communities how they like to get information (e.g., in meetings, through mailings or regular newsletters, on the Internet, at the local library, through the local newspaper, etc.). Try to accommodate their needs. At the Danbury landfill, for example, officials used a wide variety of channels to communicate with a variety of publics, including citizens groups, health professionals, and schoolchildren. Copies of some of the fact sheets produced to communicate with residents near the Danbury landfill are provided in Appendix E.
- Identify with your audience. Put yourself in its place. Recognize and empathize with the audience's emotions. (See below for additional guidance.)
- When appropriate, develop alternatives to large public meetings. In particular, hold smaller, more informal meetings whenever possible. Consider breaking larger groups into smaller ones.
- Be clear about the goals of the meeting. If you cannot adequately fulfill a resident's request for a meeting, propose alternatives.
- In certain situations, one-to-one communication may work best.

***Be honest, frank, and open.*** People often care more about honesty, trust, credibility, competence, control, fairness, caring, and compassion than about statistics and details. Trust and credibility are difficult to obtain; once lost, they are even more difficult to regain completely.

Guidelines for building trust and credibility include:

- State your credentials, but do not ask or expect to be trusted.
- If you do not know an answer or are uncertain, acknowledge that but get back to people as soon as possible. (See additional guidance later in this chapter.)
- Do not hesitate to admit mistakes.
- Disclose risk information as soon as possible and do not minimize or exaggerate the level of risk.
- Try to share more information, not less, or people may think you are hiding something.

***Plan carefully and evaluate your efforts.*** Successful planning and evaluation entails the following six elements: (1) begin with clear, explicit objectives; (2) evaluate the information you have about risks by assessing the strengths and weaknesses of the data; (3) identify and address the particular interests of different groups with which you work; (4) train your staff, including technical staff, in communication skills; (5) practice and test your messages; and (6) evaluate your efforts and learn from your mistakes.



***Coordinate and collaborate with other credible sources.*** Often more than one agency is involved in investigating or responding to a particular health risk situation. In these instances, effective coordination and collaboration among the various agencies is critical to maintaining the credibility of all agencies, because few things make risk communication more difficult than conflicts or public disagreements with other credible sources. Guidelines for effective collaboration include:

- Take the time to coordinate with other organizations or groups. Devote the required effort and resources to the slow, hard work of building bridges with other organizations. At landfills where the threat of fire and explosion is a concern, develop an active partnership with the local fire departments. Firefighters are often equipped with combustible gas meters to check for methane gas entry into homes and public buildings. Include the local owner/operator of the landfill in technical discussions. Many landfill operators are certified professionals with extensive training and experience in landfill operations, including landfill gas monitoring. They often have technical knowledge and insights that can provide critical support for public health actions.
- Try to issue communications jointly with other sources.

***Meet the needs of the media.*** The members of the media are a key communication channel with the public and a powerful force influencing public perception. You can optimize the chances of fair, efficient, and effective media coverage by following these guidelines:

- Be open with and accessible to reporters.
- Consider the needs of the media. For example, realize that reporters must meet their deadlines. Provide them with timely and readily understandable risk information tailored to the needs of each type of media.
- Prepare in advance and provide background material on complex issues.
- Do not hesitate to follow up on reporters' stories about a landfill site with praise or tactful criticism.
- Try to establish long-term relationships of trust with specific editors and reporters.
- Keep in mind that reporters are frequently more interested in politics than in risk; in simplicity than in complexity; and in danger than in safety.

***Recognize that people's values and feelings are a legitimate aspect of environmental health issues and that such concerns may convey valuable information. Respond with compassion.*** When communicating about the risks of landfill gas, it is important to recognize that, if the public perceives something to be a risk, no matter how minimal technical experts find the risk, the public believes it is a risk. Researchers have identified factors that shape the way the public perceives a risk (EPA 1992). Individuals tend to view a problem as **less risky** if it has the following characteristics: *voluntary, familiar, natural, fair, controlled by self, chronic, or not memorable*. The problem may be seen as **more risky** if it is *involuntary, unfamiliar, man-made, unfair, controlled by others, catastrophic, or memorable*. The non-technical factors that produce a perception of greater risk have been called the "outrage" dimension of risk, because these factors tend to produce feelings of outrage in people. Handling people's emotions about risk with respect and compassion is critical to developing trust. Guidelines for doing so include:

- Provide a forum for people to air their feelings.

- Be sensitive to norms, such as speech and dress.
- Listen to people when they express their values and feelings.
- Acknowledge people’s feelings about an issue—*anxiety, fear, anger, outrage, and helplessness*—and respond to their emotions. Do not merely follow with data. Always try to include a discussion of actions that are under way or can be taken. Tell people what you cannot do. Promise only what you can do, and be sure to do what you promise.
- Show respect by developing a system to respond promptly to calls from community residents.
- Recognize and be honest about the values incorporated in agency decisions.
- Be aware of your own values and feelings about an issue and how they affect you.

### **How can you best communicate scientific information?**

Experience has shown that the following guidelines can help in communicating scientific information to the public (adapted from EPA 1992):

- When addressing individuals or large groups, use simple, non-technical language.
- Do not underestimate the public’s ability to assimilate technical information. If there is a compelling reason for people to learn new information, they generally will make the effort.
- Try to determine what technical information people need, and in what form. This means taking the time to know your audience. Be willing to summarize information your audience needs, rather than to present everything you know.
- Communicate on a personal level by using vivid, concrete images or examples and anecdotes that make technical data come alive. Be sure to cover people’s specific concerns.
- Anticipate and respond to people’s concerns about personal risk. Remember the factors driving the public’s concern.
- Be sure to provide adequate background when explaining risk numbers and to use non-technical language as much as possible. For example, use simple analogies such as “1 ppm is like a BB in a boxcar.”
- Provide information responsive to public concerns that is neither too complex nor patronizing.
- Put data in perspective and try to express the risks in different ways.
- Use language consistent with the expertise of your audience and avoid the temptation to use jargon (for example, avoid describing a method for estimating risk as “conservative”).
- Explain the process you used to determine health and safety risks of landfill gas. Be willing to discuss uncertainties. Reviewing this process with the public is important to demonstrate that risk numbers are not derived from a “black box.”
- Whenever possible, use graphics and visual aids to make your points.
- Work with other credible experts to present the information.
- Use caution when comparing landfill risks to other risks. Though risks may appear com-

parable from a scientific standpoint, they rarely are so to an outraged audience. For example, it is usually inappropriate to compare a voluntary activity, such as smoking or driving a car, to an involuntary one, such as living near an odorous landfill. People will often view these as non-comparable and will respond negatively to attempts to link them.

- Do not introduce more than three new concepts at a time.

### **What if you don't know the answer?**

As you address concerns from the community, you might be faced with questions you cannot answer. Perhaps you have not researched the question yet (“Has the landfill ever accepted waste from ABC Chemical Company?”) or the question cannot be answered conclusively (“Are the respiratory illnesses in our community caused by breathing chemicals in the landfill gas?”) Risk communication experts offer seven tips on dealing with uncertainty (Chess et al. 1988):

***Acknowledge uncertainty.*** Agency experts have a natural tendency to feel that they should have all of the answers and to be defensive when they do not. Rather than trying to cover up what you are unsure of, try to explain uncertainties before you are confronted with them. Never guess or make up an answer because you feel pressured; this is a sure way of losing any trust or credibility you have established.

***Give people background about scientific uncertainties.*** People need to understand the risk assessment process so that they understand that uncertainty is an inherent part of the process. Such an explanation will help people to understand how a risk estimate can be based on the best scientific data available, yet still be uncertain. Because the risk estimate will be more sensitive to choices of certain assumptions, the risk messages should state which assumptions were used, why they were selected, and what difference they make in the risk estimate. Be sure to provide these explanations in English as simple and plain as possible.

***Be specific about what you are doing to find the answers.*** You do not want people to equate your statement of “I don't know” with “I don't care” or “I am incompetent.” Explain the process; let people know what has been done, is being done, and will be done to resolve uncertainties. Explain why resolving uncertainties takes time, and how conservative assumptions are built into the standard-setting or permitting process to account for uncertainty until more is known. Such an explanation is credible if it is provided early, when the process itself is explained. An explanation also involves describing how various uncertainties affect risk estimates and which ones are the most significant for a particular issue. To maintain credibility, be sure to balance uncertainties with certainties.

***Consider involving the public in resolving the uncertainty.*** Involving the public in dealing with uncertainty is typically viewed by the public as fairer and could lead to better solutions. Welcoming community suggestions about ways of improving risk assessment data can elicit technical information (e.g., exposure routes that may have been overlooked) and can demonstrate that your agency listens and is responsive. However, be aware that people often are sensitive to “token” gestures. Perceived token gestures undermine credibility.

***Stress the protectiveness that is built into the standard-setting and risk assessment processes.*** Stressing the protective nature of these processes is quite important for maintaining public confidence, because often people do not realize that, in the face of uncertainty, government agencies build in margins of safety to account for the uncertainty and to err on the side of health protec-

tion. Without this understanding, people are likely to be concerned about uncertainty because they fear that it leads to their being exposed to greater risk.

*If people demand absolute certainty, pay attention to values and other concerns, not just the science.* Public demands for certainty and disputes over science often reveal disagreements with agency process, policies, and values. People sometimes feel that they can make more headway with an agency if they talk about science rather than about values, so they may focus on science when they really are concerned about agency judgment calls.

*Acknowledge the policy disagreements that arise from uncertainty.* In the face of such a disagreement, understand the nature of the disagreement and have the appropriate parties acknowledge the range of opinion. For example, if the disagreement is about science, scientists should explain the differences and discuss science; if the disagreement is about values, discuss values.

## **A Risk Communication Case Study: West Covina, California**

In the late 1960s, much of the hazardous waste from the Los Angeles area was trucked a half-hour away to a 40-acre garbage dump in West Covina. Developers built houses right up against the dump site. Strong odors emanated from the dump, where organic chemicals were mixed with garbage on the theory that bacteria from the garbage would break down the chemicals. However, through this process, methane gas migrated to the surface, carrying a variety of organic chemicals with it.

By the late 1970s, more and more residents were complaining about the odors and asking about possible health effects. In 1981, a study found that vinyl chloride in excess of the state ambient air standard was present in the gases coming into the neighborhood. By 1983, at least nine other potential carcinogens were found in ambient air at the site.

At first, state officials from the California Department of Health Services made many of the mistakes that polarize these situations. They did not create mechanisms for communicating regularly about the problems. Nor did they acknowledge the outrage felt by residents, who had no way to control their exposure to dust, fumes, and odors, and who could not obtain the information they wanted. As a result, when the agency presented a report about risks of chemical exposure, the residents responded with criticism and distrust. To make matters worse, subsequent to the meeting, methane was found at close to explosive levels in houses nearest to the dump. The fire department had to evacuate 19 homes, and it was 4 months before the gas collection system was upgraded and the residents were allowed to return.

Relationships with the community began to improve only when agency staff made a commitment to talk with constituencies in the community and establish positive relationships. Staff members began to work with people trusted by the community's different constituencies—for example, by inviting local activists to review a draft report and sit in on an advisory committee meeting. The agency held additional meetings to listen to concerns and demands of residents. The state could not meet all of these demands, such as the demand for a multimillion dollar exposure assessment, but it did provide a summary of data about all substances to which the community might be exposed and conduct a review of birth certificate data. In these ways, the agency acknowledged the residents' outrage and allowed them a substantial role in suggesting courses of action, thereby establishing a constructive working relationship with the community.

Source: Neutra 1989

## The Danbury Landfill—Addressing Community Concerns

Local health departments in Danbury and Bethel, Connecticut, began receiving numerous telephone calls in the summer of 1996 from residents about strong odors from an old Danbury landfill. Residents were concerned about the nuisance aspects of the odor; health symptoms such as itchy, watery eyes, headaches, and increased asthma; and other potential health effects. State and local agencies developed a variety of communications and outreach activities to keep residents informed throughout the process of odor control, site monitoring, and landfill closure activities and to respond to residents' requests for specific health and other information. Outreach activities were phased out as citizen complaints diminished over time. Outreach included:

- Establishing a hotline that provided information and recorded callers' messages.
- Producing fact sheets on "Municipal Waste Landfill Gases" and "Reproductive Health and the Danbury Landfill."
- Distributing biweekly press releases to provide residents with updated information.
- Publishing a newsletter (one issue) jointly produced by the Connecticut Departments of Public Health and Environmental Protection, the Danbury and Bethel Health Departments, and the Bethel Citizens Coalition, with articles by each of these organizations on recent developments and responses to health and environmental issues raised by residents.
- Holding public meetings (two) to provide citizens with the most up-to-date information regarding landfill closure and odor control measures and to respond to questions.
- Hosting a cable TV session with local physicians to provide health information and answer call-in questions from viewers.
- Holding a forum with local physicians (of whom about 25 attended) to make presentations and discuss odor and health issues associated with the landfill. The meeting increased physicians' understanding of the issues and enabled them to better address their patients' concerns. Also, the "Danbury Landfill Update" newsletter (see above) advised residents with medical concerns to see their primary physicians, who could refer them to specialists in environmental medicine for further evaluation.
- Visiting a local school system (the mayor and local health department staff) to make presentations to elementary school and high school students.
- Attending a meeting of a local citizens group that formed in response to the strong odor problem at the landfill to discuss strategies for addressing residents' requests.
- Conducting a tour of the local sewage treatment plant for the Bethel Citizens Group. (At one point, the plant was suspected as a possible source of the hydrogen sulfide odor, which turned out not to be the case.)
- Expanding the landfill closure plans. The initial plan involved closing the landfill with a clay cap over a portion of the landfill. In response to citizen complaints, this plan was expanded to include a gas control and treatment system (on an accelerated schedule); air and additional groundwater monitoring; an odor registry of health complaints; a liner under the landfill to reduce leachate and any potential groundwater contamination; and a cap over the entire landfill area. In addition to state and local health and environmental agencies, the local citizens group was involved in monitoring, selection of closure options, and other aspects of the landfill.

Also see Chapter Three for a discussion of the technical aspects of the Danbury landfill.

## Additional Resources

The following variety of resources—from publications to online documents to educational and professional organizations devoted to assisting with the practice of risk communication—are available to help environmental health professionals develop effective risk communication programs:

American Industrial Hygiene Association (AIHA) Founded in 1939, AIHA is an organization of more than 13,000 professional members dedicated to the anticipation, recognition, evaluation, and control of environmental factors arising in or from the workplace that may result in injury, illness, impairment, or affect the well-being of workers and members of the community. As part of a continuing education program, AIHA offers an Effective Risk Communication Training Series. <http://www.aiha.org/distancelearning/html/implementingrisk.htm>.

ATSDR. n.d. Agency for Toxic Substance and Disease Registry. Atlanta: Department of Health and Human Services. Primer on Health Risk Communication Principles and Practices. Available from: <http://www.atsdr.cdc.gov/HEC/primer.html>. Provides a framework for the communication of health risk information to diverse audiences. Discusses issues and guiding principles for communicating health risk and provides specific suggestions for presenting information to the public and interacting effectively with the media.

ATSDR. 1997. Agency for Toxic Substance and Disease Registry. Atlanta: Department of Health and Human Services. An Evaluation Primer on Health Risk Communication Programs and Outcomes. Available from: <http://www.atsdr.cdc.gov/HEC/evalprmr.html>. Can be used to facilitate planning evaluations for risk communication programs. The primer informs decision-makers about what should be communicated, in what form, to whom, and with what expected outcome; identifies performance indicators; and provides guidance on how to use target audience ideas and opinions effectively to shape the risk communication message.

California State University at Northridge (CSUN) The Risk Communication Forum provides links to key sources of environmental health risk information and to fellow professionals in the environmental health community. <http://www.csun.edu/~vchsc006/tom.html#Introduction>.

The Center for Environmental Communication (CEC) at Rutgers brings together university investigators to provide a social science perspective on environmental problem-solving. CEC (formerly the Environmental Communication Research Program) has gained international recognition for responding to environmental communication dilemmas with research, training, and public service. <http://aesop.rutgers.edu/~cec/>.

The Center for Environmental Information (CEI) is a private, nonprofit educational organization founded in Rochester, New York, in 1974. CEI's Environmental Risk Communication Program offers training, resources and skills to enable all parties involved in an environmentally risky situation to work together toward a mutually acceptable outcome. <http://www.rochesterenvironment.org/>.

Chess C, Hance BJ, Sandman, PM. 1991. Improving Dialogue With Communities: A Risk Communication Manual for Government. Available from the Center for Environmental Communication (CEC) <http://aesop.rutgers.edu/~cec/> at Rutgers University. Summarizes practical lessons for communicating about environmental issues.

National Association of County and City Health Officials (NACCHO). Don't Hazard a Guess: Addressing Community Health Concerns at Hazardous Waste Sites. A practical hands-on guide. Although the guide addresses hazardous waste sites, much of it is applicable to working with communities on landfill gas issues. Copies are available from NACCHO, Suite 500, 440 First Street NW, Washington, DC 20001-2030; telephone (202) 783-5550, or at [www.naccho.org](http://www.naccho.org).

The National Partnership for Reinventing Government has developed a guidance document, Writing User-Friendly Documents, to help writers avoid producing complicated, jargon-filled documents. <http://www.plainlanguage.gov>.

National Research Council. 1989. Improving Risk Communication. Washington, DC: National Academy Press; 1989. Provides guidance about the process of risk communication, the content of risk messages, and ways to improve risk communication.

The Risk Communication Network The Risk Communication Network is a project initiated by the World Health Organization Europe (WHO Europe) and coordinated by the Centre for Environmental and Risk Management (CERM). The risk communication network staff produces RISKOM, a regular newsletter outlining developments in risk communication throughout Europe and beyond. Network membership and the newsletter are free.

[http://www.uea.ac.uk/menu/acad\\_depts/env/all/resgroup/cerm/rcninfo.htm](http://www.uea.ac.uk/menu/acad_depts/env/all/resgroup/cerm/rcninfo.htm).

University of Cincinnati Center for Environmental Communication Studies The mission of the Center is to enhance the understanding and quality of communication processes and practices among citizen, industry, and government participants who form and use environmental and health policies. <http://www.uc.edu/cecs/cecs.html>.

The University of Tennessee College of Communications offers seminars on risk communication. <http://excellent.com.utk.edu/>. Crisis communication links and environmental issues links can be found at <http://excellent.com.utk.edu/~mmmiller/riskcom.html>.

## Hotline

Risk Communication Hotline. Responds to questions on risk communications issues and literature, provides information on U.S. EPA's Risk Communication Program, and makes referrals to other related agency sources of information. 202-260-5606, Monday through Friday, 8:30 a.m. to 5:00 p.m., E.S.T.

## References

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