COMMUNICATING WITH CUSTOMERS ABOUT ELECTRIC AND MAGNETIC FIELDS (EMF)

VOLUME II:

RISK COMMUNICATION

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INTRODUCTION

Over the past few years, your customers have watched numerous television stories or read newspaper articles about research studies investigating whether there are health effects from exposure to electric and magnetic fields (EMF). Some of your customers are undoubtedly concerned about their exposure to EMF, in their home, and particularly if they live near a transmission line or substation.

This guide does not provide new information about the EMF research. That information is contained in Volume 1, which summarizes current studies, court cases, and legislation concerning EMF. Volume 1 describes *what* to communicate to the public. This guide discusses *how* to communicate that information effectively.

The fundamental problem with EMF is that we don't know whether exposure could contribute to health problems. At the present time, the scientific community does <u>not</u> accept that such a link had been proven. At the same time, many customers have read news stories that seem to say that such links have already been established. If nothing else, the gap between what the scientific community says and what the media says creates a credibility problem for utilities. So instead of facts we are left talking about <u>risk</u>, things that might happen, but aren't sure. We're dealing with people's perceptions of risks, not just the actualities.

The EMF field is not alone in this. The same thing applies whether we're talking about cleanup of hazardous or toxic chemicals, constructing buildings to withstand earthquakes, or the danger of floods. We're talking about risk, but not just risk as seen by technical people, but risk as seen by the public. In fact, in recent years it seems like almost every major issue involves some controversy over risk, often with considerable debate about whether there even is a risk.

Because so many people are facing the challenge of communicating with the public about risks, a new field has grown up called *risk communciation*. This field deals with such questions as how to be a credible communicator, what forums are best for discussing risk, what behaviors should be avoided to maintain the utility's credibility.

This volume summarizes those findings from the risk communication field that have direct applicability to the EMF field. One of the most important findings from this field is that people's perception of risk changes dramatically depending on whether they made a choice to accept the risk, or feel it was imposed on them. The individual who drives without a seatbelt makes a choice to accept that risk -- and may even be resentful of efforts to force him to change his mind. On the other hand, the same individual may demand that a utility "guarantee that a proposed power line has no risks," even though no one can make such a guarantee. The difference is that one risk the individual accepts as a matter of choice, the other is imposed.

This has important implications for how utilities make decisions. If you make decisions using the "decide-announce-defend" approach, you'll find the public demanding no-risk guarantees. On the other hand, if people are consulted prior to making decisions, that increases the feeling that the decision was voluntary, with an accompanying change in how people perceive risk. That's why much of this guide is about how to consult with the public during decision making. Public participation in decision making provides a context for discussing questions of risk that greatly increases a utility's prospects of having a productive dialogue.

SECTION 1

RISK COMMUNICATION

5.1 HOW PEOPLE PERCEIVE RISK

At first glance, it seems like the way people see risk is full of contradictions: More than one utility person has been berated about exposing a child to EMF by a parent who was smoking the whole time. An individual who spends his week worrying about a modern waste facility in his neighborhood may spend the weekend rock-climbing, parasailing, or skydiving. A proposal to build a new transfer facility to improve the handling of hazardous waste may meet stiff opposition, despite the fact that everything about the new facility reduces the probability of exposure.

As contradictory as these events seem to be, they're not much different than other events we experience in life. An experience one person finds exciting, another may find terrifying. One person may completely avoid a particular food as unhealthy, while someone else considers these concerns to be silly. When we talk about risk, we're talking about perceptions and emotions, and they have different rules than "rational" science.

Several studies have been conducted in which people who make a living assessing risk were asked to assess the relative significance of various hazards (smoking, car accidents, exposure to toxics, etc.). The same list was given to people with no technical background in risk assessment. The responses between the groups were significantly different. The general public ranked some hazards much higher than technical people, some much lower. The interesting thing, though, was that there was a consistency to how the public ranked the hazards. It wasn't just chaos. There was clearly a logic at work, albeit an emotional logic.

5.2 FACTORS THAT AFFECT PERCEPTION OF RISK

Since the mid-1980s, researchers have been studying the rules the public applies in assessing risk. They have discovered that there are a number of key issues that cause people to perceive a risk as being higher or lower. These factors include:

5.2.1 Benefits

One of the first questions the public asks is: “Why is this project needed?” That’s because one of the most important judgments the public makes is whether the benefits to be derived from an action outweigh the risks. If the benefits are large, then risks may seem low in comparison.

Recent experience in siting power lines shows that questions of EMF health effects are less likely to be important if the public is fully convinced of the need for the project. Generally speaking, the public is somewhat sympathetic to claims that a utility will not be able to provide sufficient electric power without additional transmission. The public is considerably less sympathetic to lines built primarily for reliability purposes. Reliability seems too abstract to the public; it seems like something the utility wants, not something the public wants.

5.2.2 Availability of Alternatives

The next question the public usually asks is: “What are the alternatives?” In effect, people say: “Before I accept that this risk is necessary, I want to be sure that taking this risk can’t be avoided by using an alternative approach.”

This is one of the reasons that, in siting power lines, the public immediately asks about undergrounding. [The other reason they ask about undergrounding, let’s face it, is because power lines are ugly.] If undergrounding reduces EMF, they figure, we can solve two problems at one time. We reduce the risk of EMF, and get rid of ugly lines. Of course it’s still not clear that undergrounding reduces exposure to EMF.

5.2.3 Equity

If there is a risk, people generally feel it is fairer, or more equitable, if that risk is shared equally. If we're part of a group of people who experience most of the risk, with others not experiencing the same risk, we will perceive that risk as much more significant.

If it were to turn out that exposure to EMF from power lines is a public health hazard, then those who live near power lines will see this as a much more significant risk, deserving of societal attention, than those who do not. If it were to turn out that there are health hazards associated with EMF from home wiring, something to which most people in our society are exposed, then the perception of the importance of this risk may change substantially.

5.2.4 Choice

The key question here is whether or not an individual has a choice about whether to be exposed to a risk. People see any risk imposed on them by others as much greater than risks they assume themselves. This is why people see no contradiction between skydiving on weekends, but complaining about any risk imposed on them by their local utility,. This is why someone who smokes, may still be deeply concerned about air pollution. One activity, with all its attendant risks, they choose to engage in. The other risks are created by someone else's choices.

The public generally sees electrical facilities—generating plants, substations, power lines—as something imposed on them. They do not see them as a voluntary risk, even though they use electrical power themselves. One of the strong arguments for consulting the public about siting issues is that if the public feels it had a choice, its perception of risk will be much lower.

5.2.5 Control

The key questions here are: “Can I, as an individual, control the amount of risk to which I’m exposed?”; “Can I move away from it for awhile, turn it down, insulate against it?” When people can exercise some control, they experience the risk as smaller.

Generally speaking, EMF is not seen as something subject to individual control. There are some indications, however, that one of the values of conducting field measurements in peoples’ homes is that as people understand exposures in their own home, their sense that they can exercise control over their exposure to EMF is increased, with some reduction in anxiety.

5.2.6 Affect on Children

Any risk that affects children, particularly if it uniquely affects children, is seen as a much greater risk. Children are seen as innocents who cannot protect themselves, or don’t understand the implications of their own behavior. Therefore, the risk to the child is seen as involuntary, even if the child somehow engaged in behavior that led to exposure.

Unquestionably, EMF became a much more important issue as soon as several studies suggested that magnetic fields are a possible contributor to childhood leukemia. At this point, people’s perception of the importance of the EMF issue was changed significantly.

5.2.7 Dread

Some risks have become, over time, more feared, more dreaded than others. Often this is because they are associated with major events—such as Three Mile Island, Love Canal, Chernobyl—which were frightening, and received considerable media attention. Anything "nuclear," for example, is seen as having much more risk than other hazards that, statistically, are more dangerous.

Preliminary research on EMF suggests that while the amount of dread associated with it is nowhere near as high as anything nuclear, there is still a moderate amount of dread associated with EMF. This dread may be increased by a fear of what EMF studies may portend. If living near a transmission line may be a danger to us, what else are we going to find out about being around electricity that we didn't know about? If being around electricity is dangerous after we spent so many years feeling it was safe, what other familiar things are in fact dangerous?

5.2.8 Human Origin

Many people accept risks that occur in nature—floods, hurricanes, earthquakes, landslides, while they become very upset by statistically lesser risks that are of human origin. If it's "an act of God," there doesn't seem to be much to do about it, and it seems foolish to rage against it. But if human beings created the risk, then people are responsible for the risk, and responsible for its consequences, and this makes the public angry.

EMF is definitely perceived as of human origin.

5.2.9 Media Attention

The mass media exert a powerful influence on public perceptions. First of all, people are influenced by the total number of times a risk is mentioned. The assumption seems to be: If it's talked about so much, there must be something to it. Where there’s smoke, there’s fire. The other crucial role that the media plays is to tell people what an event means. If research results are announced, it’s not just the fact that they are announced by the media that’s important, but the fact that the media tells you this is something to be worried about.

Since the publication of the Savitz childhood leukemia study [See Section 4.2.1], with all the media attention it received, EMF has generally been perceived as a much greater risk than it once was. This perception of increased risk isn’t caused so much by the results of the study, which were very unclear, but from the sheer amount of attention the study received.

5.2.10 Familiarity

As a general rule, if people are familiar with a risk, it seems less threatening. This is one of the reasons (along with the fact that it is a voluntary activity) that automobile accidents are consistently rated as less significant by the public than the statistics show them to be.

To most people, the idea that there may be health effects from exposure to EMF is a new and unfamiliar idea. This heightens the perception of risk.

5.2.11 Understanding

If people can understand why something is risky, or how it works, they see it as less risky.

Since the scientists don’t know any mechanisms by which EMF contributes to health problems, the public certainly can’t understand the nature of this risk. So it seems riskier than it might otherwise be.

5.2.12 Trust in Institutions

If people trust the people who tell them something isn't risky, they're more likely to accept that a risk is less important. Polls show that over the last 20 years, confidence in American institutions has declined sharply. In fact, many people suspect any "big" institution, believing it will be insensitive and uncaring about the impact of its actions upon individuals.

Many utilities are suffering from a lack of trust. For some, it's partially the problem of being a big institution. For others, it's the fact that in the past many utilities took a "we know what's best for you" stance on a number of issues, and the public has since come to believe those decisions were in the interest of the utility, not the public. Many utilities are not seen as environmental "good neighbors." They are seen as insensitive to environmental concerns, unwilling to acknowledge problems, opposed to regulation, unwilling to share decision making, withholding crucial information. Many people suspect that EMF is just "more of the same."

Publicly owned utilities generally enjoy somewhat more trust than investor-owned utilities, because they are not seen as acting to protect shareholder interests, and the public exercises control through local elected officials. On the other hand, some investor-owned utilities actually have more credibility when it comes to issues of environmental sensitivity, and willingness to share decision making.

The public also seems to have a kind of "good guy/bad guy" attitude towards utilities, so that there's the "good utility" that restores their power when there's a storm, but there also the "bad utility" that wants to build power lines, or nuclear power plants, or dams.

5.3 WHEN THE PUBLIC GETS OUTRAGED

One useful way to view the factors described above, is that they make the difference between whether something is just a hazard (like a flood or a car accident), or an "outrage." Some risk communication theorists even describe the factors above as "outrage factors," because, when a number of the factors that heighten perception of risk are present, the public not only becomes anxious about the risk, but also becomes morally indignant. Unlike the risk someone may take to drive to the corner market without their seatbelt on, exposing someone to a risk which has a number of outrage factors associated with it is viewed as criminal or immoral.

Once the public is outraged, it no longer sees cost as a relevant consideration. In fact, once a risk is considered “immoral,” laws are often written which specifically exclude cost as a consideration in evaluating remedies for that risk. Such laws have been written in fields such as toxics cleanup, as well as air and water quality cleanup.

The belief that removing some risks is so important that any cost is justified is an important problem for utility companies concerned with the EMF issue. Utilities that express concern about the costs of undergrounding, for example, are already being met with the accusation: “You’re more concerned with money than the life of my child.” If the public generally becomes outraged on the issue, it is possible that utilities could be forced to take very costly actions to reduce EMF, even if the science does not clearly demonstrate a risk.

A quick review of the outrage factors above shows why EMF has the potential to become an “outrage” issue for the people: The benefits of new electrical facilities are not always clear to the public. The public believes there are alternatives available (and the costs of undergrounding will not be a relevant consideration if the public becomes outraged). People living near power lines may be exposed to a greater risk than those who do not. The risk is imposed by outside institutions, rather than voluntarily accepted. People can’t significantly control the amount of exposure they receive. The research is concentrating on impacts upon children. Dread is moderately high. The risk is manmade. Media attention is increasing. People are not familiar with the risk, nor do they understand it. People’s trust in utility companies as a source of credible information about risks may be in doubt.

In other words, EMF has the potential to become an issue of considerable magnitude for utilities, and it is urgent that utilities begin to establish programs to counteract some of these outrage factors. If the public is sufficiently outraged, political leaders will act, whether or not the science clearly demonstrates there is a risk.

5.4 OTHER KEY RISK COMMUNICATION FINDINGS

There are other important findings from risk communication research in addition to those about the factors that increase perception of risk. Among those which are important for the EMF issue are:

5.4.1 The Public Doesn't Assess Risk, It Assesses Safety

Most of the science of risk assessment is an effort to compare one risk against another. It's a probabilistic science, in which the chances of a particular event occurring are evaluated, and then compared with other hazardous events to determine comparative risk.

Quite simply, the public normally doesn't think about risk this way. It may think about probabilities somewhat when it comes to a voluntary risk—such as the risks involved in choosing not to wear a seatbelt. But when it comes to risk imposed from the outside, it basically wants to know whether something is safe or unsafe. Talking about degrees of risk is something the public usually doesn't want to deal with, and if it is an issue with a number of outrage factors, is something they find morally repugnant. Thus the constant question: "Is it safe or isn't it?"

One of the reasons the public wants a yes/no answer is because, to use a rule postulated by another risk communication expert: "People simplify." All of us have to cope with thousands of choices or decisions in a day. All of us are bombarded with quantities of information about innumerable issues, and we make choices about which information to which we'll pay attention.

The basic choice we seem to make before we'll pay attention to information is: Is it a problem (or opportunity); isn't it a problem (or opportunity)? If it doesn't have relevance to us personally, then we'll probably ignore the information. People's first reaction to EMF is much the same. They want to be told whether it is a problem or it isn't a problem? If it isn't, they may pay no further attention. If it is, it is now in a box marked "problem," not a box marked "risk."

Given this tendency to simplify, it might be tempting to try to reassure the public that EMF is not a problem. However, if it ultimately turns out that it is a problem, and you've minimized the possibility to the public, your credibility will be almost totally destroyed, and this loss of credibility will extend to almost every area of operations. People won't just question your utility's credibility on EMF, they'll question you on safety issues, rate issues, anything involving the disclosure of information. Failure to keep the public informed could even create some degree of legal liability.

Just because the public would prefer to simplify doesn't mean it's lazy. Once the public comes to grips with an issue, it is able to discern the complexities of the issue. It's just that the first response is to hope the problem will go away.

5.4.2 When a Project is Being Considered, Discussion of Risk is More Politics than Science

Normally, people talk about EMF risk because a utility is proposing a project, and someone else opposes it. Even if opponents to a program are seriously and genuinely anxious about the possible health risks of EMF, it remains a fact that if the general public becomes more frightened about EMF, opponents to the project gain political power. No matter how conscientious the utility may be in presenting an accurate picture of the science surrounding EMF, if people's anxieties are allayed, the utility's chances of proceeding with the project are improved. We're not talking dispassionate science (as if that ever exists, in fact) we're talking about politics, somewhat informed by science.

In fact, because everybody (sometimes with the possible exception of the utility knows it's politics, they automatically assume that all the actors, including the utility, are using the science to their advantage. This is one reason why, once the utility is a proponent for a project, it is no longer perceived as a fully credible source of information about risk. People assume that the utility is trying to put as good a face as possible on the project, and that the opponents are trying to do the opposite.

One implication of this, is that the best time for a utility to get a more objective discussion of EMF is sometime other than when the utility is proposing a project. Once you're advocating something, it's just assumed that you're using science in a self-interested manner.

5.4.3 Acceptability is a Matter of Values and Opinion

In the best of all worlds, science would be able to tell us whether there is a risk associated with EMF, or not. It would also be able to tell us how this risk compares with other risks. But even if this were true, which currently it is not, science still couldn't tell us how much importance to attach to any one risk. As we discovered in our discussion of factors that affect perception of risk, there are numerous reasons why one risk which the scientists think is about on a par with another risk may be seen as immensely more important than the other.

In the final analysis, the decision as to how much of society's resources to expend to protect against a particular risk is a question of values or philosophy. Many technical people do not understand that their technical training has values embedded in it. For example, for most utilities the values of "safety" "reliability" and "least cost" are so ingrained that it never occurs to utility employees that, to others, other values could be more important. As a result, once it is clear that undergrounding, or some other way of reducing EMF exposure costs 10 times more than an overhead line; they assume that the answer is obvious. The decision that cost is more important than reducing exposure to EMF is a value choice, not a technical issue. In a democracy, the public has the right to decide that the expenditure of money to underground all lines is a legitimate cost. If the utility doesn't acknowledge the public's right to make that choice, the utility is imposing its own values, rather than making technical judgments.

It is true that at present we rarely have appropriate forums for making these choices. If you ask only the people in a local neighborhood whether they want a line undergrounded, with costs included in the rate base, of course they'll say "yes." But it isn't fair to the ratepayers to pay extra for the unique benefit of one neighborhood. If you ask a local neighborhood whether it will pay to underground a line at its own expense, that isn't fair either unless the line serves only that neighborhood. To be fair, the costs should be borne by the other beneficiaries of the line as well. If we had a forum in which all the rate payers could be asked whether they wanted to bear the cost of undergrounding all lines, then if the public chose to do that, the utilities' legitimate role would be to do the best job of undergrounding it can. Otherwise the utility is attempting to impose its values on the public.

5.4.4 Risk is a Symbol for Social or Ideological Concerns

When rural parts of the U.S. underwent electrification, the arrival of the power lines in town was a powerful symbol of progress, of new possibilities and opportunities in the community. It wasn't just the fact that electricity had arrived, it was a symbol for all the changes taking place in the life of the community. Today, power lines also serve as a symbol, although not always a positive symbol. Power lines are often a symbol of growth in a negative sense, of "sprawl," or "urbanization," and the arrival of big institutions. Power lines can also be symbolic of the spread of technological society, about which many people are ambivalent. For some people they also symbolize the loss of a more pristine environment. To the extent that power lines have negative symbolic associations, people may be predisposed to believe there are risks associated with being near them.

5.4.5 Risks are Amplified through Many Intervening People

Much of the recent research in risk communication is looking at how information about risks is "amplified." What they are referring to is the fact that in modern society we rarely experience hazards first-hand—only a small number of people were directly affected by Three Mile Island or Love Canal. Instead the meaning of these events is provided to us by the media, by experts, by interest groups, by influential people, by friends and acquaintances, etc. It's not just that these intervening parties provide us with information about the event, they also interpret the event, they give it meaning (as a “disaster,” “outrage,” “the greatest environmental disaster in history.”

As the media reports on the latest EMF study, it puts a particular slant on the story—something new to be worried about, a portent of other problems from exposure to electricity. When a local politician picks up the concern and proposes regulations limiting exposure to EMF, he shapes the meaning a bit more. When a friend tell you his interpretation of what he read in the newspaper, the meaning changes yet again. All are participating in amplification of the meaning of the event.

Each source of information has slightly different credibility. Some are credible for some kinds of information, some for others. Sometimes these sources differ on the meaning of an event. When they’re in agreement, then the effect of amplification is particularly strong.

The concept of amplification is important to anyone communicating with the public, because it reminds us that rarely are we communicating directly with the public. Often there are other parties intervening who shape the meaning of your communication. Furthermore, we always communicate in a context, so even if we communicate directly with people, there are other sources of information around them that shape what that communication means.

5.4.6 Risk Information May Frighten and Frustrate the Public

Research shows that the effect of providing risk information to the public is not always to reassure them. Often the public becomes anxious or fearful, where previously they were not, in response to efforts to provide risk information. The public may become annoyed with risk information that provides only probabilities and uncertainties when what they would like is to be reassured they are safe.

5.4.7 Once People's Minds are Made Up, it is Difficult to Change Them

Once people have decided there is a significant risk from exposure to EMF, and it is something to worry about, it becomes very difficult to change that opinion. People worried about EMF might say the reverse about utility people, claiming that once utilities have decided there isn't any risk from EMF, it takes an incredible amount of research to change their minds. Both observations are probably justified.

In fact, as issues become highly polarized the only people who are viewed as credible sources of new information are people whose opinions are known to agree with our own. The parties operate in self-contained communities and talk principally to themselves. The only interchange with opponents is in written form, or posturing in front of a meeting. There can even be significant misperceptions of each other's positions which go uncorrected because of the lack of communication.

If you want to have genuine risk communication, it must occur before people have formed a fixed opinion about the issue. In fact, the research shows that if the appropriate facts reach people before their minds are made up, there is a decent chance that their first impression will be the correct one. This assumes that the form this information comes to them is understandable (and that they are motivated to understand).

5.4.8 If People Don't Know Much About an Issue, They are Easily Manipulated by How it is Presented

While it is difficult to change a strongly held belief, people who haven't yet formed an opinion may be easy to influence, and may respond to presentation format as much as the facts of the case. In fact, research shows that people cannot readily detect omissions in the evidence they receive, and rarely ask the kind of probing question that would reveal flaws in the argument.

5.4.9 People Remember What They Feel

Emotion seems to serve as a strong fixitive for memory. If someone has experienced a hazard first hand, or knows someone who has, its significance will be greatly increased. If someone is successful in linking the visual image of a child who is dying from leukemia with assertions this was due to exposure to EMF, this may be far more important in causing people to see EMF as a risk than all the science in the world. Remember, too, that what people experience in public meetings on EMF risk is often not very reassuring. They sometimes see bitter debates between alleged experts, with complaints that others are manipulating the data, that still others are distorting the science to please their corporate sponsors, and statements of fact that later research shows to be folly. The emotional message that is left is of doubt, anxiousness, and a generalized sense that no one can be trusted. This is probably what's remembered more than the science.

5.4.10 Out of Sight is Out of Mind

A California manufacturing company recently proposed to build a new facility to temporarily store hazardous waste until it could be picked up for removal to a permanent disposal site. The facility was to be built on the same site as an existing facility where waste was now stored out in the open in steel drums on an asphalt parking lot. Everything about the new facility was an improvement. There would be a roof. The floor of the facility would be designed to be impervious to materials. There was a sprinkler alarm system in case of fire.

But the community which adjoined the manufacturing company was outraged by the proposal. It automatically assumed that the new facility increased risk. Because no serious hazardous events had occurred with the old facility, residents assumed that present risk was essentially zero. In fact, all the precautions the company was taking seemed only to prove to people how hazardous the materials really were. What seems to happen is, because people have emotionally accepted the present situation, it is now considered “safe,” and anything that changes that situation is seen as increasing risk, or making it “unsafe.”

Somewhat the same phenomena occurs with efforts to upgrade power lines. Even if an upgraded line will not result in increased EMF, any change is assumed to increase risk. It’s true that neighbors to the existing line may have wished it gone for some time, and the proposed change may have given them the first leverage to try to get rid of it, or at least get it undergrounded. But it’s clear that, to some extent, any change is seen as increasing risk.

5.5 USING RISK COMPARISONS

A considerable amount of the risk communication literature addresses the use of risk comparisons, e.g., “the risk of X is approximately twice as big as Y.” Many of the findings from this research are summarized in the reports shown in the bibliography. We have chosen not to spend much time on risk comparisons here for the simple reason that the best advice that can be given on the use of risk comparisons related to EMF is: **Don’t use them**!

In order to make a risk comparison, you have to accept that there is a scientifically accepted level of risk. Since there is currently no acceptance that there is a risk from exposure to EMF, it certainly can’t be put someplace on a statistical scale. In those cases where research studies have attempted to specify a level of risk, that level is often more an artifact of how the research was conducted than anything else. It is true that even those studies that have endeavored to define the level of risk associated with EMF have defined a level of risk that is relatively modest. But you can't have it both ways: you can't, on the one hand, say that the studies do not provide scientific proof that exposure to EMF increases health risks; but then turn around and try to use the same studies to prove that the risk, if it does occur, is small.

Here are a few general guidelines to follow if you use risk comparisons on other issues:

5.5.1 Don't Mix Risks that have a Number of "Outrage Factors" with Risks that Do Not

For example, if you compare an involuntary risk with a voluntary risk, the public will not accept that as a valid comparison. Just because two risks have about the same statistical probability doesn't mean they have the same emotional significance. To be accepted, they have to have the same emotional valence as well.

5.5.2 Don't Use Technical Jargon

Use of statistical notation, such as 10^9, or use of unfamiliar measurement units, doesn't just confuse the public, it often gives the public the impression you're trying to say you're smarter than they are. If that's the message the public gets, it will react with anger and resentment.

5.5.3 Don't Belittle People's Anxieties.

The public is very sensitive to being patronized. Many technical people use risk comparisons to make the public's concerns look silly. This just backfires. People feel put down and just want to get even. Often they do.

5.6 THE ROLE OF THE MEDIA IN RISK PERCEPTION

People rarely experience a hazard first hand, so they have to rely on mass media to provide information about the risk. But, as noted earlier, the mass media don't just simply provide information, they "amplify" the risk by providing information about its meaning or significance. As a result, the mass media play a powerful role in how people perceive risk.

While the media do provide information, the media also make judgments as to which stories are "newsworthy." It appears that reporters and editors use some of the same rules that the general public does in deciding that a story is newsworthy, If there are a number of outrage factors associated with a particular risk, that makes the story more newsworthy.

One important finding is that people's perception of risk is influenced by the number of times a story appears in the media. The more times a story appears, the more likely the public will perceive it as a significant risk even if the news stories are saying that the level of risk is unknown. This is a finding of considerable importance for the EMF issue, because of the increased media coverage of the issue.

It also appears that the more sensitized people become to one risk, the more sensitized they become to all risks. So communities where there is already considerable concern about risks such as toxics, nuclear power, air or water quality problems, etc., are more likely to pick up on EMF as an issue of concern.

Of course, the media think a story is more newsworthy if they are the first to report it. After it has been reported by several sources, it loses its new value.

This urge to be first sometimes prevails over the accuracy of the report, and often these inaccuracies are picked up by subsequent reports, using the first report as a source. This means that it is singularly important for risk communicators to get information to the media, in an understandable and accessible form, before the story becomes “hot.” Once it’s “hot,” urgency may overtake accuracy.

Also, while risk communicators might wish that the media would be more discerning in challenging unsubstantiated claims made by project opponents, the media does not think this is necessarily its job. The media’s sense of responsibility is to present a “balanced” story, that is, a story that is not unfairly slanted towards one point of view. Not infrequently, this means that in a news story, the announcement of the results of an expensive study may be “balanced” by a quote from the leader of an opposition group who just questions the studies without any particular basis, or simply makes unproved assertions. Even if the media believed it was its role to test the validity of both side’s position, few in the media have the training or the time to do so.

For the media, it’s the politics of the story that are interesting, and the science often comes out second-best. The fact that a local elected official made a statement about EMF may get considerably more coverage than scientific results, and certainly more coverage than an exposition about how risk assessment is done.

Finally, good news is not newsworthy. The media tends to report things that deviate from normal conditions, or when they go awry. As long as something is safe, there’s nothing to report. The minute that something is unsafe, then things have gone awry and should be reported. Studies that show no health effects from EMF may have difficulty even getting reported in the media, because the fact that something which was supposed to be safe, is safe, is not newsworthy.

5.7 LESSONS FROM THE RISK COMMUNICATION FINDINGS

Let's review some of the key risk communication findings to see what they might suggest about programs utilities could engage in that will keep the EMF issue from turning into an adversarial contest, rather than a discussion:

5.7.1 Do What You Can to Minimize the "Outrage" Factors

Some of the characteristics of EMF do increase outrage and can't be changed. These include its possible effect on children, the dread associated with it in some people's minds, and the fact that it is of human origin.

But you may be able to do something about some of the other "outrage factors," such as:

- Be fully prepared to discuss project need, to satisfy people's concerns about whether the project justifies some possible risk;
- Discuss alternatives—going to the public with only one alternative almost automatically sets up an adversarial situation;
- Whenever possible (and there are many instances when it is not) design projects so that the people receiving the benefits are the people experiencing the impacts;
- Provide opportunities for the public to participate in decisions. This contributes to their sense that they have some control over the situation, and that exposure to EMF is voluntary;
- Increase people's familiarity and understanding of EMF. For example, showing people how to take measurements in their own homes helps to make EMF more familiar and understandable, and therefore less threatening;
- Protect the credibility of your organization at all times. If you've been trustworthy in the past, people are more likely to accept what you say now. Let the public feel misled just once, and it may take you years to rebuild your credibility;
- To the extent possible, present the information in terms which make emotional sense to the public;

- Recognize that arguments over risk are often arguments over political power—if you recognize that it's a political problem, not a problem of science, you'll probably do a better job;

- Be clear on which decisions are technical, and which are value choices, and consult with the public on the value choices;

- Remember that people's feelings about power lines, even if expressed in terms of concern about EMF, often have more to do with the fact that some people see them as representing growth and technology, about which they feel ambivalent, or as a symbol for how humans have impacted the planet;

- Plan for the fact that you rarely communicate directly to the public; rather, any perception of risk is amplified by other parties such as the media, influential people in the community, interest groups, friends, etc.

- The key time to educate people is **before** a project is proposed. Once the utility is a proponent for a project, it will no longer be considered a source of credible information;

- If possible, get information to people before they have their minds made up. This means you can't be reactive on EMF, you have to have an action plan in place from the beginning;

- Avoid risk comparisons on EMF—you can't compare a risk that may not even exist.

- Understand the way the media work, so you can plan for it, and don't feel taken advantage of when the media make the story as "newsworthy" as possible.

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SECTION 6

PUBLIC INVOLVEMENT AND RISK PERCEPTION

Today, many utilities are finding that they need to consult with potentially affected people **before** decisions are made, if they hope to gain sufficient public support to be able to implement decisions. In years past, the public was more inclined to accept decisions made by technical experts. In addition, people seemed more willing to accept some negative impacts, such as living near power lines or substations, as a necessary part of having electricity in the community. But in recent years, many utilities have announced decisions based on what they thought were sound technical judgments, only to find that public outcry blocked implementation of the decision.

These trends were already well along even before the concern about EMF. The EMF issue has, however, convinced many utilities that while consulting with the public was already a wise decision, with the advent of EMF concerns, consulting with the public may be crucial if there is to be any hope of siting projects.

6.1 WHY PUBLIC INVOLVEMENT MAKES SENSE FROM A RISK COMMUNICATION PERSPECTIVE

There are a number of reasons why conducting a public involvement program makes sense based on what we've learned about risk communication. These include:

6.1.1 Public Involvement Helps Resolve Other Issues

As discussed in previous sections, concerns about EMF are often raised in order to gain political power to block a project. But why do people feel they need to block it? Often people have concerns about issues such as aesthetics, impacts on property values, adequate compensation for impacts on future uses of the land, etc. If those issues are identified early, and addressed, it may not be necessary for people to raise the EMF issue. But leave those issues unresolved and people will use EMF as a way of getting leverage to force utilities to address them.

6.1.2 Public Involvement Increases Peoples' Sense of Control

People perceive a risk as much more significant if it is imposed on them, rather than accepted voluntarily, and if they exercise no control over their exposure to the risk. Public involvement increases people's sense that they made a choice.

Does it really make a difference for people to make a choice? Here are two examples:

6.1.1.1 Hazardous waste facility siting

The Province of Alberta recently successfully sited the first new hazardous waste facility in North America in the past two decades. In fact, the day the provincial government announced where the site would be located, another community took out a full-page ad in a major paper criticizing the fact that the provincial government did not select them as the disposal site. Since siting a hazardous waste facility is normally very controversial, what did the planners do that made at least two communities want the facility?

The first thing they did was to conduct the scientific studies necessary to identify a number of sites as potentially satisfactory from a technical point of view. Then they went to each community and said: "There's a site in your community which we believe is potentially a good site for a hazardous waste facility. We want to talk to you about what kind of additional studies you would want to be sure it's safe, what kind of mitigation and compensation there would be, etc. But we want you to know, going in, that we will not site the facility in your community unless it is approved by vote of the entire community."

From a risk communication perspective, what they had done was made this a voluntary risk. It wasn't being imposed from outside. As a result, people literally perceived much less risk than they would have they seen the government as trying to impose the facility upon their community. Two communities voted to accept the facility, and the provincial government chose between them.

6.1.1.2 Home buy-outs

In one community, people became so concerned about EMF exposure near an existing line that the utility finally decided to offer to buy any home from people adjacent to the line who were worried about EMF. The company ended up buying a fair number of homes (under twenty). Now the utility is selling these homes on the open market and, until the recent real estate downturn, was making a profit. Homes are sold, of course, with full disclosure that the homes are near a power line and there have been scientific studies about EMF exposure and health effects.

Why would one person be willing to pay full price for a home near a transmission line, when someone else was so scared of living near the line that he wanted to sell his home? The difference once again is that people are choosing voluntarily to assume the risk. As a result, they quite literally don't perceive the risk as being as significant as did the people who felt the risk had been imposed on them.

6.1.3 Consulting with the Public Builds Trust and Credibility.

Risk communication researchers say that public involvement is an essential component of building credibility. As a recent risk communication manual published by the Electric Power Research Institute put it:

> For many researchers and practitioners of risk communication, citizen participation is so critical that they include it in what they consider the two overriding risk communication principles: 1) People and communities in a democracy have a right to participate in decisions that affect their lives, their property, and the things they value; 2) The goal of risk communication in a democracy should not be to diffuse public concerns or replace action; rather it should be to produce an informed public that is involved, reasonable, thoughtful, solution-oriented, and collaborative.

6.1.4 Public Involvement can Prevent Polarization.

Once a community has become polarized over a risk issue such as EMF, real communication drops dramatically, and is more likely to become political posturing. People concerned about EMF start suspecting any communication from the utility, and listen only to activists who are convinced there are severe risks.

Experience shows that public involvement, if it gets started early enough, can channel some of people's anxiety and concern into a genuine dialogue. Even though people may differ, they are still talking to one other, and some of the extremes of adversarial communication can be avoided. Once polarization occurs, people simply get reinforced in their belief that the risk is severe.

6.1.5 Public Involvement Builds a Relationship.

All of these comments really boil down to one fundamental principle: effective public involvement builds a relationship with the public. If the utility is known and trusted, if it has demonstrated its concern for people's health and safety, then its risk communication will be believable. If the utility is impersonal, used to simply making technical decisions and announcing them, expressing more concern for cost than for safety, then people are likely to mistrust the utility's risk communication, seeing it as just an effort by the utility to get what it wants. The precursor of effective communication is a relationship of trust and caring. Public involvement is an effective means of demonstrating caring, and earning the trust of the public.

Utilities that have developed effective public involvement programs on all major decisions, have found that their credibility is enhanced, and the public is more willing to work in a collaborative manner. For example, early in the 1980s the Bonneville Power Administration (BPA) initiated a major program to consult with affected publics on virtually all major decisions. An appraisal of public perception of BPA made at that time showed that the public perceived BPA as "arrogant, insensitive, and uncaring." Recently, after 10 years of hard work at public involvement, the public viewed BPA as "open, progressive, and a leader in public involvement." From BPA's perspective, things have gone from an adversarial situation to one where they can sit down and discuss the issues, and in many cases, arrive at consensus decisions amongst the affected publics.

6.2 WHAT IS PUBLIC INVOLVEMENT?

The term which is most frequently used to describe the process of consultation with the public is "public involvement," although terms such as "public participation," "community involvement," and "citizen participation" are used interchangeably. Public involvement is the process by which the views of all interested parties are integrated into your decision making. Public involvement involves <u>two-way</u> communication, an exchange of information with the public. This makes a public involvement program different from a public information or public relations program, which primarily involve providing information <u>to</u> the public. Public involvement programs require communication both <u>to</u> the public and <u>from</u> the public.

6.3 WHO IS THE PUBLIC?

When we use the term "public," what we're really talking about is *those people who see themselves as affected by the issue.* The implication of this statement is that "the public" is different for each issue. On one issue, the people you need to talk with may be just a few directly affected landowners. On siting of a power line, for example, "the public" tends to be the landowners adjacent to the proposed line. Once the EMF issue is raised, additional people may become concerned even though they do not live adjacent to the line. There may even be a few issues where you want to consult with as many of your ratepayers as possible, or at least all the groups you can find who represent ratepayers.

Also, it's a matter of who <u>perceives</u> themselves to be affected. Two people may live near a proposed facility, one may see himself as essentially unaffected, while the other may see the same facility as a disaster. But, of course, for either person to make a choice whether they want to participate in decisions, you need to let them know about the issue, and its potential consequences, so they can make an informed decision whether they are affected, and whether they would like to participate.

Here are some of the factors most likely to cause people to see themselves as affected by a decision:

1) <u>Proximity</u>: People who live in the immediate area of an existing or proposed facility;

2) <u>Economics</u>: People who see themselves as experiencing an economic benefit or loss as a result of a decision;

3) <u>Use/Service</u>: People who now have (or could have in the future) a use or service which could be affected by the decision;

4) <u>Social/Environmental Issues</u>: People who are concerned about issues such as protecting the rights of minority groups, ensuring social equity or equal access to services, or impacts on the environment;

5) <u>Implementation/Legal Responsibility:</u> People (whether technical staff or policy makers) who will play some role in implementing the decision, or must take related actions because of the decision.

At the beginning of each public involvement program you will need to ask yourself: "Who are the people who could potentially see themselves as affected by this decision?" Then you will be designing activities targeted to reach that particular segment of the larger general public. Rarely will you be consulting with "John Q. Public." Sometimes you only need to talk to a few people, sometimes to hundreds.

6.4 WHAT DOES "INVOLVEMENT" MEAN?

When we suggest that you "consult" or "involve" the public, what do we mean? Do we mean that we're going to let the public decide how much power you need to supply? Will we take a vote every time someone wants electric service? Of course not.

The real question is: What does it take for a decision to "count," that is, for a decision to have enough acceptance that you're actually able to implement it? Sometimes the public is satisfied as long as they're informed of the decision. This was particularly true up through the 1950-60s, but is less so today. Nowadays, the public seems to expect to be heard before a decision is reached, or even "influence" the decision.

Influence does not automatically mean that people expect to dictate the final outcome, but they know that because they participated the problem was defined a little differently, or additional alternatives were considered, or things were taken into consideration in finding a solution which otherwise might not have been. People can feel they have influenced a decision without finding all aspects of the final decision acceptable.

Finally, there are decisions which people see as so affecting their lives that they will not accept a decision they don't agree with. These are the kinds of issues that if you don't get buy-in, you're likely to be facing lawsuits, or condemnation, or some third party gets brought in who potentially could overturn your decision.

Not every public involvement program will result in a consensus decision. Yet there continue to be payoffs to making every significant decision in a visible manner, with opportunities for groups to influence the decision. Experience has demonstrated that public involvement does make a difference in public acceptance of utility decisions. Conversely, because of the trend for increased participation in all aspects of society, the public generally will not accept being left out of a utility's decision making process, or being only superficially involved at the end of the process.

Are there some decisions which, no matter how much public involvement is offered, will still remain controversial? Yes, of course. However, even if some groups do not like the final decision itself, the fact that the decision making process was open, visible and fair often makes the decision legitimate in the eyes of the general public.

6.5 THE POTENTIAL BENEFITS OF PUBLIC INVOLVEMENT

Among the benefits that utilities have experienced from using public involvement are:

- Anticipating public concerns and attitudes
- Educating the public
- Improving the quality of decisions
- Minimizing cost and time delays due to public controversy
- Ability to get consensus on decision
- Increased ease of implementation
- Avoiding "worst-case" confrontations
- Maintaining credibility and legitimacy

6.6 WHEN IS PUBLIC INVOLVEMENT NEEDED?

Which issues justify public involvement? Quite obviously, public involvement is needed on those issues which are “significant” or “controversial.” But, since significance is often in the eye of the beholder, how can you forecast when a decision could become significant or controversial? Here are some likely factors:

- The impact of the decision is sizable
- The decision will affect some people more than others—some people might think it’s unfair
- The decision will impact a vested interest or use
- The decision involves a subject which is already controversial
- The decision requires active support for implementation

If you’re not sure whether public involvement is needed:

- Check with others who’ve worked with similar issues
- Check with other nearby utilities
- Ask those people who you know would be affected by the decision
- Design “checkpoints” so that you can start out with one level of public involvement and increase or decrease the program based on the level of interest shown
- Don’t expect to be right all the time, nobody is

6.7 PUBLIC INVOLVEMENT TECHNIQUES

There are numerous techniques for consulting with the public. Actually, most public involvement programs involve the combination of several techniques. In particular, a good public involvement program includes techniques for getting information to the public (information techniques), and techniques for getting information from the public (involvement techniques).

Here are some of the *information* techniques:

Newsletters: You might want to publish a newsletter updating the interested public about a number of ongoing decisions, or, if the decision is big enough, you might even publish a newsletter that tracks a single decision from beginning to end. Use your newsletter to announce public involvement opportunities. After each public involvement activity, put something in the newsletter about “what we heard,” and its impact on the decision.

Briefings: Go to key elected officials, agencies, or key interest groups and inform them of upcoming decisions, and their opportunities to participate in those decisions. Build a relationship with key individuals and groups, so they trust you to keep them informed, Then, don’t let them be taken by surprise.

Feature Stories: If you’re working on an issue with general public interest, contact the local newspaper, radio, or television station to have them do a story on the issue. Remember, though, that while you can provide information to the media, you can’t control how they do the story. But just like all relationships, if you keep them informed, are forthright, and provide accurate information, the media is more likely to produce favorable stories.

Newspaper Inserts/Bill Stuffers: If you have an issue which justifies trying to inform everyone in the community, you could include the information with your monthly bill. If there’s too much information to fit in the bill-stuffer, prepare a newspaper insert that can be distributed in a newspaper.

Here are some of the *involvement* techniques.

Interviews: If the number of people with whom you have to consult is small, then one-on-one interviews may be the best way to get the information you need. It can be time-consuming, but it’s the best way to get a lot of in-depth information in a hurry. Even if you are using other involvement techniques like public workshops, you might want to interview a cross-section of key interest groups. The things you learn in interviews are sometimes different than what people say in public forums.

Meetings or Workshops: Most public involvement programs involve some form of meeting. But generally speaking, formal public hearings are to be avoided, because they only exaggerate differences. Highly interactive forums, such as workshops, are more effective, and less likely to produce polarization. The key thing is to know why you are holding each meeting—what do you need to learn from the public out of this meeting? Once you know that, then you can come up with a meeting design that fits that specific purpose.

Coffee Klatches: Sometimes its more effective to talk with people in a more informal setting than that provided by a public meeting. Instead, meet in people's homes, with a small group of neighbors or friends they've invited. Make sure that coffee and cookies are served, and conduct the meeting informally. You'll usually have to have several coffee klatches to talk with as many people as you would in a public meeting, but it will be more relaxed and less likely to become adversarial.

Task Forces/Advisory Committees: Task forces or advisory committees are often effective because participants can become sufficiently well educated about the issue that they can deal with relatively complex issues. Also, task forces or advisory committees encourage dialogue between the interests. To be effective, membership on advisory groups must be representative of all the key viewpoints. Be sure to include "opponents" as well as people who generally support utility decisions. Also, be aware, that advisory groups may not be able to speak for the public at large.

Polls: Polls can give you a sense of how many people in your community hold a particular viewpoint. They are, however, expensive, and must be designed by qualified pollsters.

6.8 SELECTING PUBLIC INVOLVEMENT TECHNIQUES

People who are experienced at public involvement have learned to prepare a public involvement plan. Preparing a public involvement plan forces you to think systematically about what combination of techniques is appropriate in your situation.

The goal is to ensure that your public involvement process is an integrated part of how you go about making decisions. You need to analyze how you will be making your decision sufficiently so that you know why and how you are involving the public at each step in your decision making process. Just as there are key junctures in decision making you would not go beyond without having adequate technical, economic, or environmental studies completed, you should know what information you need to have received from the public before passing those same junctures.

Unless you make a systematic analysis of your particular circumstances and which public involvement techniques are most appropriate in those circumstances, you'll find that developing a public involvement plan simply degenerates into everybody arguing for their favorite technique. As a result, there will be a good chance that the techniques you choose won't really be appropriate to your circumstances, and will be viewed by the public as merely "tacked" on to the main decision making process rather than an integral part of it. Public involvement must be an integrated part of the decision making process in order to result in the public's confidence in the final decision.
On the following pages is a description of a thought process—a systematic way of thinking about exactly what is to be accomplished, with whom, when—and only then—how. This thought process can be used on a wide variety of issues, not just those related to EMF.

6.9 STEPS IN THE THOUGHT PROCESS

The basic thought process is shown in the figure on the next page. If these questions are translated into specific steps, they look like this:

1. Agree on the major steps in the decision making process.
2. Identify the public involvement objectives for each step in the decision making process.
3. Identify the "information exchange" needed to complete each step in the decision making process. The information exchange includes the information you need to provide to the public in order for people to participate effectively, and the information you need to learn from the public for decision-making purposes.
4. Identify the groups or interests that need to be informed/involved at each step in the decision making process.
5. Identify any special circumstances surrounding the issue that could affect selection of public involvement techniques.
6. Identify the appropriate techniques—and their sequence—to accomplish the required information exchange.

More information on these steps is provided below:

Step 1: Identify the Steps in the Decision Making Process

Different groups and interests will participate at different stages in the decision making process, with different levels of interest and intensity of involvement. Before you can begin to assess what kind of participation is appropriate at each stage of the process, you must first get agreement on the steps you will go through in decision making. This can vary significantly depending on the kind of decision you're making.

If you're trying to site a major power line, the decision-making process may last for a number of months and have numerous steps. If you're consulting with a few landowners about construction impacts, the discussions might all take place within 1-2 weeks. Each decision-making process is slightly different.

Public Involvement Thought Process

How will the decision be made?

What do you hope to accomplish
with the public?

What does the public need to know to participate effectively?

What do you need to learn from the public?

Who is the public for this issue?

What special circumstances exist that could affect selection of public involvement techniques?

What public involvement techniques are appropriate?

Step 2: Identify the Public Participation Objectives for Each Step in the Siting Process

Here the question is: "Exactly what are we trying to accomplish with the public during this step in the decision making process?" This can be expressed in the form of public involvement objectives. Examples of public involvement objectives are:

- Assess the level of interest which various publics will have in this decision;
- Assess the level of understanding of key groups' knowledge about the issue, and the options for addressing the issue;
- Get "buy-off" that the list of alternatives is complete (or appropriate),
- Get agreement on site evaluation criteria;
- Identify public concerns associated with each alternative,
- Assess the acceptability of a proposal; and
- Identify the mitigation measures needed to ensure acceptability, i.e. "who wants what."

Remember, there will normally be one or more public involvement objectives for each step in the decision making process.

Step 3: Identify the Information Exchange Needed to Complete Each Step in the Siting Process.

Effective public involvement programs include a public information component. The public won't be able to participate effectively unless provided with adequate information. But the difference between public information and public involvement is that in public involvement, forums are also provided for the public to comment upon and influence decision making. The term "information exchange" is used because it's hard to think about what information the public needs to participate without also thinking of what you need to ask the public. The two questions are intertwined.

The nature of the information which must be exchanged depends on what you're trying to accomplish with the public at each stage in the decision making process—your public involvement objectives. For example, if your public involvement objective is to get "buy-off" that the list of alternatives is complete (or appropriate), then the information you might need to get to the public might include:

- the process by which the list was developed,
- the criteria used in identifying these alternatives,
- any alternatives that were considered but dropped from the list, and why they were dropped, and
- prior public involvement in developing the list.

The information you might want back from the public would be:

- the acceptability of the process used to screen alternatives,
- whether there are alternatives which were dropped from the list which should be retained, and
- whether the list of alternatives is complete.

Keep in mind that this analysis is done for each public involvement objective.

Step 4: Identify the Individuals, Groups or Interests with Whom Information Must be Exchanged

Some individuals, groups or interests will only participate at key points in the decision making process, while others will participate throughout. For example, during a stage in which highly technical studies are being conducted, it's likely that only well organized groups or agencies will have the technical expertise to participate in such questions as whether the scope of study is adequate, whether the methodologies being used are appropriate, etc. So you can expect that "the public" will be different for each step in the process. In fact, to be sure that you choose the most appropriate public involvement techniques, it's necessary to anticipate who "the public" will be for each stage in the process.

You can tell who has to be involved at each step by looking at the kind of information you need from the public. If for example, you are at a step in the decision making process where what you need is information about land use plans in a community, you probably need to talk with planners in local communities, or with local developers. If you are at a stage where the information you need from the public is the acceptability of alternative plans, then you need to reach a broad public.

Knowing which public you need to reach tells you a lot about what public involvement techniques to use. If you need information on plans of local developers, then a series of interviews with key people may be useful. But if you need to reach a broad general public, then you need to think about reaching the public through the media, and conducting workshops to get comment from the public. Be aware that even at steps in the process where you are seeking information primarily from a limited public, you may need to continue to provide information to a broader public.

The reason for identifying “target” groups and interests is to help in selecting techniques, not to exclude any interests. Even if the chosen techniques are aimed at limited numbers of people, provision must normally be made for self-identified groups to participate if they wish.

Step 5: Identify Any Special Circumstances That Could Affect Selection of Public Participation Techniques

Occasionally there are special circumstances which can dictate the public involvement techniques which will be used. Here are a few illustrations:

Characteristics of the Public:

Sometimes there is a high degree of community consensus. There may also be times when the various groups in the community are so antagonistic towards each other that they can hardly work with each other. On some issues the public is already well-informed, but on others there will have to be a substantial public education program before people can participate effectively. On some issues the public is quite apathetic, while on others the public is all too mobilized.

Characteristics of the Issue:

If the issue attracts national attention, something like a Love Canal, then you will need to use techniques which reach national interest groups. If the issue is exceptionally technical, then you may need to spend more time and effort with public information. If the level of interest in the issue is very high, with thousands of people potentially interested, different techniques must be used than on issues where everybody who is interested can be gathered in a single room. How important an issue is to the various interests may also dictate techniques. If an issue is “do or die” for any of the interest groups, they will unquestionably demand a higher level of participation than on issues where they have a position, but their key interests aren’t at stake. If the decision making process will last for several years instead of just a few months, it’ll be necessary to use techniques that sustain interest and visibility over an extended period of time.

Be aware that these special circumstances can change during the course of the study. A local issue may begin to attract national interest. A local election can radically change the political complexion of a community. As more studies are done, groups change their perception of how important an issue is to their interests. As a result, you need to periodically review your public involvement strategy to adapt to these changes in circumstances.

Step 6: Identify the Appropriate Techniques—and their Sequence—to Accomplish the Information Exchange

All of the preceding steps have been designed to give you the information you need to complete this step. You now know the decision making process, what you want to accomplish with the public (the public involvement objectives), the information exchange which must take place, and with whom, and you’ve identified any special circumstances which could influence which public involvement techniques are appropriate. All of this information provides the context for selecting public involvement techniques. Now you are ready to select techniques.

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SECTION 7

BASICS OF MASS COMMUNICATION

There are several basic premises that are fundamental to planning any communication program. There premises are:

1) Effective communication is not targeted at “the public,” but at specific *audiences* within the public.

2) Effective communication means utilizing the proper *communicators* to be believable. Different audiences will find different communicators credible—it’s not just the message, but who the message is from that causes people to accept it.

3) Effective communication also uses *communication mediums* that will be credible to the targeted audience. Whether the medium is written material from the utility, an article in a scientific journal, a television news story, or a speech at a service club; each medium reaches a particular audience. When the medium doesn’t match the targeted audience, the message isn’t believable.

4) Effective communication requires the communicators to send consistent *messages*. Even if there is a huge effort to communicate, but the messages are inconsistent or contradictory, there may be no effective communication.

Let’s look at audiences, communication sources, communication mediums, and messages in more detail:

7.1 AUDIENCES

If you watch advertisements on television, you will see that they are carefully crafted to communicate to a particular audience. Soft drink ads, for example, will have the kind of music, visual effects, and spokespeople who speak to young people, sub-teen through teenagers. Some car ads are clearly aimed at people in their late teens or early twenties, some at affluent car buyers in the 40-50 year age range. Some advertisements are aimed at women, some at men, some at working class people, some at the affluent. Every effort is made to match the advertisement with the targeted customers for the product.

Even when there is no product to sell, effective communication requires that you know your audience, and that you craft your message to reach that particular audience. When you're communicating with the public about EMF, you are not just talking to a large, undifferentiated public, you are talking to particular audiences who, because of their role or exposure to EMF, have an interest in the issue. At various times, a utility wrestling with the EMF issue may need to communicate with:

- utility board members
- members of the scientific/medical community
- local elected officials
- staff of state and local governmental agencies
- media
- residents near existing lines
- residents near possible future lines
- utility employees
- EMF activists (people from either within or outside the community who are organized to express their concern about EMF)

Each of these groups of people is an audience. Each audience has a different purpose or role, is responding to different pressures or has different concerns, and may even speak a different language. A utility board member feels a responsibility to the economic well-being of the utility, but also has to demonstrate concern for protecting public safety. A local government official may be responsible for one specific area of concern, and have little interest if the issue does not touch on that concern. The media has ways of working that make some communication acceptable, and others not. Each audience has unique characteristics that must be taken into account if a message is going to get through.

7.2 COMMUNICATORS

Communicators on the EMF issue could include:

- the project manager for a transmission or substation project
- a staff scientist who specializes on the EMF issue
- a spokesperson from external affairs
- a local area manager
- the utility's General Manager or CEO
- a consultant who is an expert in some aspect of EMF, such as field measurement, epidemiology, etc.
- a utility lineman or other field personnel
- influential community leaders who have been educated on the EMF issue
- a state or local health agency official
- a news reporter who has been provided information by the utility

Each audience finds different communicators credible. If the utility is an advocate for a project, the utility may say the same thing as an "independent" technical expert, but the expert may be much more believable. The reason is that the utility is seen as having a self-interest in the decision, and therefore likely to present only the most favorable information. On the other hand, if the staff of a utility have a good working relationship with the utility board, utility staff may be the most credible source of information for the utility's board. If utility employees feel good about utility management, then management may be a credible source of information. If they feel unhappy or resentful towards management, then anything from management may be viewed as "just more propaganda." A homeowner might not accept information from a utility about the possible impact constructing a nearby power line upon property values—after all, the utility has a stake in acquiring rights-of-way at the lowest possible price—but the same sort of information might be believable from the state board of realtors.

As these comments suggest, the key consideration in selecting an effective communicator is: "Who is credible to a particular audience?" Among the factors that influence credibility are: expertise, prior relationship, perceived self-interest, shared interest and affinity.

7.2.1 Expertise

Generally speaking, people are more likely to accept information from people with the credentialing or experience to establish that they are experts in a field. On this score, at least, utility staff may be a credible source of information because they are known to have expertise related to power lines. But even then, there are levels of expertise appropriate to a particular audience. If you are sending a spokesperson out to a civic group, the you might send someone from External Affairs who is an excellent public speaker, easy to understand, and interesting. For this audience, the fact that this person is from the utility utility may be an adequate level of expertise, and the form of presentation may be more persuasive than additional technical credentials. But if the same information was being presented to a group of scientific researchers, the speaker from External Affairs may not be nearly as effective as a technical specialist from the utility, even if the specialist is not as good a speaker, because the scientists will expect a higher level of technical expertise.

7.2.2 Prior Relationship

We tend to trust information that comes from people we know. When we evaluate credibility we use phrases like “we know where he is coming from” or “they have a track record,” to indicate that a relationship of trust and confidence has been established. This means—all else being equal—that the best communicator may be someone who is already established with the audience. Except for highly technical audiences, a local area office manager who is well known to local governmental figures and the community may be more credible to such audiences than a highly qualified expert in EMF, even if the EMF expert is training the area manager in what to say. If someone has an established relationship with a reporter, she may be a better person to contact that reporter than a technical expert. The person who knows the reporter might even accompany the technical expert to a meeting with the reporter, in effect “vouching” for the technical expert.

Establishing prior relationships is especially important if you hope to be credible in a crisis. If people know you and trust you because of past experience, they are more likely to trust your information in a crisis, even if you have an interest to protect during that crisis. This is why preventative communication about EMF is very important. If the utility has been communicating openly and honestly with the public about EMF (and other issues) in the past, then it is more believable even in a situation where the utility wants to build a project.

7.2.3 Self-Interest

Whenever we're dealing with a salesperson, we always (or at least we should) take whatever they say with a certain caution. We are well aware that they want us to buy something. We may even suspect that the reason they are influencing us to buy one product and not another has less to do with our needs than their economic incentives.

Exactly the same phenomena is at work when a utility tries to reassure the public that the risk associated with a proposed new transmission line is acceptable. The public sees the utility as having an interest in the outcome of the decision, so finds the information less credible.

This is one of the advantages that "EMF activists" have when raising questions about EMF risks. Because they have no apparent economic interest at stake, they are sometimes seen as more credible than the utility. In reality, of course, both the utility and the EMF activist have political influence at stake, but that is not always taken into account.

Consultants retained by the utility industry often have exceptional expertise, but their credibility is undermined by the fact that they are paid by the utility industry. Opponents of projects often make much of the fact that consultants are being paid by the industry. In fact, one consultant who has been retained by utility companies in the past remarked: "I try to do the most objective job I can, but because my fees are paid by the utility industry, I get called a whore. Someone who is presented as an expert by opponents to a project may present a very biased and one-sided picture, but he gets called a crusader." Bitter though this comment may be, it does reflect political reality.

Because information put out by utilities often lacks credibility once the utility has a discernable self-interest, e.g. once it is proposing a project, the best time for a utility to educate influential people in the community about EMF is before the utility is an advocate for a project.

7.2.4 Shared Interest

People are not put off by the utility having an interest in the outcome if they see themselves as sharing that interest. If people see a project as badly needed to provide electrical service to their community, then they have a sense of shared purpose with the utility. If people see a project as impacting them, but with the benefits going to others, then they do not have a shared sense of interest, and the utility's credibility goes down. Large industrial customers, whose electrical bills may significantly influence their profitability, may strongly share the utility's interest in keeping rates down. Therefore, they may be very responsive to a utility's arguments that an unproven risk doesn't justify a significant expenditure of funds. But an individual homeowner, for whom the rate increase might be very moderate, is likely to put safety first, and feel outraged that a utility won't do everything it could do to protect him.

7.2.5 Affinity

Even if there isn't an obvious shared interest—such as an economic interest, people also develop a sense of affinity based on the fact that the communicator is "one of us." If the communicator dresses like you, talks like you, is about the same age as you, has a similar background to you, you are probably going to assume that fundamentally you have similar interests. Thus, there are advantages to selecting communicators who match their audience. If the communicator is like the audience, the sense of affinity this creates may mitigate the fact that the utility has an interest in the outcome.

7.2.6 Rank

There are some audiences where rank—such as being the CEO or General Manager—is more important than expertise for credible communication. In dealing with high-level elected officials, for example, it is often advisable to remember that these officials are very sensitive to rank or status, and may not give much credence to technical personnel, no matter how knowledgeable. Heads of major organizations usually expect to deal with heads of other organizations, even if they all bring their technical people along.

7.2.7 Persona

It's clear that some people have learned to present themselves in a way that seems authoritative. Others, who may even have more authority or expertise, do not. In the final analysis, when all the other factors above have been considered, it may come down—if all else is equal—to selecting a person who knows how to present himself or herself effectively.

7.3 COMMUNICATION MEDIUMS

There are many mediums that could be used to communicate with the public:

- a utility newsletter
- the monthly bill-stuffer
- a paid advertisement in a local newspaper
- a radio or television talk show
- a face-to-face meeting
- presentation of a scientific paper at a professional meeting
- a video for use at civic groups, or with school children
- a public meeting
- via a trade association or utility group

It's not just who says it, but where it's said that matters. A physician is unlikely to be impressed by clippings from the Reader's Digest, or worse yet, the National Enquirer. At the same time, electrical workers are not likely to be persuaded by "egghead" publications, and might find an article in the union newspaper much more persuasive. A cattleman might find an article in the Cattleman's Journal more persuasive than a story in the metropolitan newspaper (written by "city-folk").

The key issue, once again, is knowing your audience. Not only are some mediums more credible to a particular audience, some are more likely to reach a particular audience. This means that you must know enough about your target audience to know something about how they acquire information. What are their reading or viewing habits? Are there trade or professional journals that this audience reads? Is this audience more likely to be influenced by a highly visual presentation, or by statistical analysis?

Keep in mind that the best medium for communication may not be directly between the utility and the public. If the utility provides information to a reporter, and then in turn that information appears in a feature story in a newspaper, readers may see the information as more "objective" than if the same information came directly from the utility. At times, utilities may do better by educating other influential people in the community, then having them freely express their own opinion, than trying to communicate directly with the public. Comments from a non-utility scientist have a different impact than the same comments from utility staff or consultants. Remember that people often get their information second or even third hand, and each person in this chain "amplifies" the message, not only reporting the information, but also commenting on its significance. It may be possible to anticipate the path by which information reaches a target audience, and aim your communication at the intervening people, rather than directly at the audience itself.

7.4 MESSAGES

It's not just what you say, but how you say it, that's important. But what you say is also important. Many risk communication programs are ineffective because the utility doesn't have a well-defined message, so even though it has the opportunity to communicate with the public—through the media, for example—there's no consistent message. Sometimes, particularly in larger organizations, different parts of the utility put out a different message. The utility's EMF specialist may acknowledge that there is scientific uncertainty about health effects at the same time that someone in project management tells the media that "there's nothing to worry about." At best this produces confusion, at worst it is so contradictory that it appears the utility is being misleading, or says one thing to one group, something else to another.

There are two seemingly contradictory guidelines for selecting messages: (1) every communicator needs to be communicating the same messages, and (2) messages need to be tailored to particular audiences. This apparent contradiction is normally resolved by preparing a hierarchy of messages. There are a small number of primary messages which should be communicated by all communicators. But once those primary messages have been established, each communicator needs to tailor secondary messages that communicate to the interests and expertise of particular target audiences. Thus secondary messages are tailored, but they are also consistent with the primary messages which will be communicated by all the other utility communicators.

The following chapter provides a number of examples of EMF messages that utilities might use.

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SECTION 8

ALTERNATIVE EMF MESSAGES

Based on the present state of the science about the potential health effects from exposure to EMF, it is possible—even probable—that utilities will have very different interpretations of the research, and different messages to communicate about EMF. This section presents three alternative message diagrams, showing different stances taken by utility companies. Each of these stances is defensible, given the present state of science—although that could change as new studies are completed. Utilities may also construct messages which blend components of these three examples.

8.1 THE UNDERPINNINGS OF UTILITY POLICY

When a utility develops an approach to EMF, and develops messages to communicate that approach, there are three factors that go into developing the utility's overall approach, or stance, towards the issue. These are: 1) values; 2) interpretation of the facts/science; and 3) circumstances:

8.1.1 Values

"Values" are the yardsticks by which which we judge things to be good/bad, fair/unfair, moral/immoral, prudent/imprudent. Often values are assumed, rather than consciously deliberated. Over time, values become embedded in the policies and traditions of an organization, and guide decision making even if the values are not explicitly stated.

Decisions involving values choice are rarely between an obvious good or bad, but have to do with the relative importance—the "value"—given to one "good" over another. To use an example, both "cost-effectiveness" and "health and safety" are good. But the relative importance that a utility places on one, versus the other, may be the determinant of the stance the utility takes in dealing with the EMF issue.

In fact, there are three basic values that often come into play on the EMF issue. These are:

- Providing electric power in the most *cost-effective* manner
- Protecting the *health and safety* of the public
- Acting as a good corporate citizen (*civic responsibility*)

All utilities share these three values to some extent; the question is the relative weight they assign to them. One utility may emphasize its responsibility to provide electric power as cheaply as possible, and may resist added costs (such as those from increased right-of-way width, rephasing of power lines, or even undergrounding) that might be associated with providing a higher level of health and safety protection. Another utility might reverse that priority, deciding that some added costs may be justified to provide added protection for the public. A third utility might try to give cost and safety equal weight, but believe it is obliged to fully inform the public on the EMF issue, and provide opportunities to the public to participate in decisions about the issue. The third value, civic responsibility, is more a process issue. It has to do with how the utility relates to the public, and utilities that differ substantially on the cost/health and safety issue may still stress the importance of civic responsibility.

8.1.2 Interpretation of the Facts/Science

It is possible for reasonable people to disagree about how to interpret the scientific findings related to EMF, particularly because the scientific results themselves are ambiguous. If future studies are more conclusive, then the range of possible interpretations will also narrow.

There is an interaction between people's values and how they interpret the facts, particularly when the facts are ambiguous. People who place high importance on health and safety may be somewhat more predisposed to believe that there could be health effects associated with EMF. People who place an extremely high importance on cost-effectiveness may resist interpretations of the research which could lead to increased expenditures.

8.1.3 Circumstances

The third influence on utility policy is the circumstances in which the utility finds itself. Some utilities anticipate constructing numerous power lines over the next decade, while others do not expect to build any. Some utilities routinely underground their distribution lines, while others never do. Some utilities operate in communities which demand and expect a very high level of participation in all decision making, others in communities which are happy leaving important decisions to the experts. These kinds of circumstances influence how important the EMF issue is to a utility, and may shape its response.

When decision makers make a decision about a utility's EMF policy, these three factors—values, interpretations of the facts/science, and circumstances—all interact. It becomes almost impossible to state which is most important, because they help determine each other.

8.2 THREE ALTERNATIVE PHILOSOPHIES

Currently, most utilities are approaching EMF in one of three ways:

Philosophy A: There is still considerable doubt that exposure to EMF increases health risk. Until things are much more certain, it would be imprudent to spend the ratepayers' money on costly steps to avoid exposure to EMF when these steps may ultimately prove to have served no useful purpose.

Philosophy B: While uncertainty remains, there may be health risks due to EMF exposure. We should take prudent steps now to reduce the public's exposure, while avoiding more costly actions that are not justified as long as uncertainty remains.

Philosophy C: Although the health effects from exposure to EMF are uncertain, if it is ultimately established that there are effects, this will be an issue of considerable social importance. It is prudent for us to inform the public fully, and consult with the public on decisions about how the utility addresses the EMF issue.

All three philosophies are an effort by utilities to be responsible and prudent. Either of the three philosophies can be justified given the current state of scientific knowledge. Each emphasizes a possible consequence of failure to act in the current situation:

- If money is spent to reduce exposure, but ultimately it turns out there are no health effects associated with exposure, the public may criticize utilities for "wasteful" spending of ratepayers' money.
- If ultimately it is shown that there are health risks associated with exposure, utilities which have not acted to protect the public may be criticized for being uncaring and insensitive. They may even incur some legal liability.
- If the public is not fully informed and consulted, and eventually it is shown that there are health risks from exposure, the utility will have lost virtually all credibility with the public.

8.3 DEVELOPING A MESSAGE LOGIC

Messages are normally developed in a hierarchy. *Primary messages* communicate the organization's basic stance on the issue, and should be communicated by everyone speaking for the organization. *Supporting messages* are derived from the primary messages, and are designed to explain, elaborate upon, or strengthen the primary messages. Often communicators will expand upon some of the supporting message in order to tailor the presentation to the interests of a particular audience. The key issue, however, is that all the messages, no matter how refined or targeted to a specific audience, support the basic premises stated in the primary message.

On the following pages are three message logics, each starting with one of the three philosophies shown above. The purpose in presenting these alternative message logics is to assist communicators in developing messages suited to the orientation of their particular utility.

Here’s a quick summary of the key things to look for in an effective message:

Consistency: Make sure that all the supporting messages are consistent with the primary message.

Clarity: Keep the messages as clear of technical, scientific, or bureaucratic terms as possible.

Relevance: Discuss those issues that the public thinks are most important, rather than what is most important or interesting to the utility.

Defensibility: Be sure your messages are consistent with the latest research. Don’t put yourself in the position of taking positions that can no longer be defended.

8.4 PRETESTING MESSAGES

Because it’s difficult to meet all the criteria suggested above, many organizations conduct qualitative tests with their target audiences to ensure that the messages are clear, credible, and interesting. It’s easy to use language that’s confusing, or address points that are of greater interest to the organization than to the public. Pre-testing is helpful in identifying these problems before you take your messages to the public at large.

Philosophy A:
There is still considerable doubt that exposure to EMF increases health risk. It would be imprudent to spend the ratepayers' money on costly steps to avoid exposure to EMF.

EMF health risk is highly uncertain

No scientific body has concluded that EMF-health effects have been proven.

World Health Organization

American Institute of Biological Sciences

US Office of Technology Assessment

Florida Scientific Advisory Committee.

US Environmental Protection Agency

Results of studies are so contradictory as to be of questionable value.

Some say high voltage matters, some say low.

Studies based on actual don't show effects.

No know biological mechanism.

The majority of studies show no effect.

Steps to reduce exposure may be very costly yet have no impact

Any steps taken have an impact on electric rates

All costs end up in the rate base.

Science is so uncertain that it's not clear what, if anything, the money should be spent on.

Undergrounding may increase costs by as much as ten times.

Costs of reconfiguring the entire power system could be staggering.

Philosophy B: While uncertainty remains, there may be health risks due to EMF exposure. We should take prudent steps now to reduce the public's exposure.

Some epidemiological studies have shown an association between EMF exposure and cancer

Werheimer-Leeper, Savitz, Peters studies.

Occupational studies.

Studies on electric blankets, coiled cable heating, video display terminals.

Scientific uncertainty about EMF health risk is high.

Epidemiological results are sometimes weak and inconsistent but still suggestive.

Only recently have avoid siting new EMF can have biological effects.

No recognized measure of dose-response.

Prudence means taking steps to control risk but at a modest cost.

May be possible to reduce exposures during construction or reconductoring.

It may be prudent to

facilities near schools or playgrounds.

Citizens can take steps to reduce exposure.

Expensive steps such as undergrounding or greatly wider rights-of-way are not justified at this time.

Philosophy C:
Although the health effects from exposure to EMF are uncertain, this could be an issue of considerable social importance. It is prudent for us to inform the public fully, and consult with the public on decisions about how the utility addresses the EMF issue.

Some epidemiological Potential health, social Choice as to how much have
shown an associationand environmentalto spend to avoid risk between EMF
exposure andimpacts of EMF—if is a social decision not cancer. health e

	proven—could be large.	
Wertheimer, Leeper, Savitz, Peters studies.		Utility has an obligation to inform the public—just in case
Occupational Studies	We are all exposed to EMF.	
Studies on electric blankets, coiled cable heating, video display terminals.	Reconfiguring the power system could entail huge costs.	The utility is concerned about the public's health and safety.
EMF acts like a cancer promoter.	Reducing occupational exposures could have large social and economic costs.	The people receiving the greatest exposure are utility employees.
Biological and physiological studies show biologic effects.	Current estimates of population at risk may be low.	The utility will consult with the public when making choices about expenditures to reduce exposure.
Temporary effects on sleep-wake patterns.	Litigation over EMF may have consequences beyond those immediately involved.	

SECTION 9

DESIGNING AN EMF RISK COMMUNICATION PLAN

This chapter outlines an approach that utilities can follow to develop an EMF risk communication program that is appropriate to the individual circumstances facing each utility. This chapter assumes that the reader is familiar with the concepts in Section 7. If not, that section should be read before attempting to carry out the steps in this section.

9.1 STEPS IN DEVELOPING A STRATEGY

The basic steps to be followed in developing an organizational program are:

1) Establish an internal EMF planning team
2) Identify utility policy.
3) Identify and prioritize audiences.
4) Develop risk communication objectives.
5) Identify program components.
   a) Identify communication mediums.
   b) Identify communicators.
6) Develop detailed risk messages

A more detailed description of each of these steps is provided below:

9.1.1 Establish an Internal EMF Planning Team

In most utilities, the expertise needed to implement an EMF risk communication plan is located in different places throughout the organization. The people you will need to develop and implement a plan are likely to include:

- A representative from management (to ensure that you get timely decisions on policies, program goals, etc.)
- An EMF specialist (someone capable of evaluating scientific research materials related to EMF).
- A media relations expert
- Publications specialists (could include writer and graphics person)
- A video specialist
- Engineers (to evaluate the technical impacts of design changes, evaluate the impacts of programs on the construction schedule, communicate about facility design, etc.)
- Public participation/risk communication specialists

Others who might be included in the team include:

- Lawyers
- Medical/health personnel
- Labor union representative (because exposure to EMF may increasingly become a labor/management issue.)

Experience suggests that the risk communication plan should <u>not</u> be developed by a single individual or department, although one individual or group may take the lead in pulling the program together. The challenge, particularly in larger organizations, is to deliver a unified program. If the plan is developed by only External Affairs, for example, then the rest of the organization doesn't have that much commitment to the plan. When people participate in developing a plan they develop an emotional stake in making that plan work. Also, by developing a plan it's possible to avoid turf battles over whose program this is. People will relinquish control to a plan they may be unwilling to relinquish to another department. The plan should describe "<u>our</u> plan," not External Relation's plan, or Engineering's plan.

The other reason for developing a plan is that each person in the planning team, and the organizations they represent, will need to deliver their part of the program in a timely and integrated manner. By working together to develop the plan, people come to understand the role they play in the program.

9.1.2 Identify Utility EMF Policy

The next step is a discussion between management and the EMF risk communication team about the organization's EMF policy. As discussed in Section 8, utilities may—based on alternative values, interpretations of the research, or circumstances—adopt different philosophies or policies.

What's important is that there be a discussion between management and the members of the team. Each member of the team brings a slightly different perspective on the issue. Just as a policy should not be established without a discussion of the impact of that policy upon the organization's credibility and ability to communicate about risk, there should also be a discussion of impacts upon project schedules, construction costs, legal liability, etc. One of the reasons that this needs to be a dialogue, not just a decision made by management, is that knowledge about the issue is changing so rapidly that if management is a year or two behind in its understanding of the issue, it may not have the information it needs to recognize when a change in policy is appropriate.

In any event, a review mechanism should be established so that any policy statement is reviewed periodically. Interpretations of the scientific information that are legitimate today may no longer be legitimate tomorrow. If your organization has an "issues management" program, EMF should be identified as a strategic issue of some importance, and updated for management on a regularly scheduled basis.

9.1.3 Identify and Prioritize Audiences

This sequence of steps suggests a linear progression in which you do one step, then the next, and so on. In reality, it's hard to complete some of these steps without thinking about several at the same time. This is particularly true of this and the next step, identifying objectives. Logically and rationally, one should probably proceed from policies to objectives then on to audiences. Practical experience suggests, however, that focusing on audiences is a very useful exercise for clarifying objectives.

There are really three questions to ask:

1) Which audiences (individuals, groups, interests, categories of people) within our service are likely to have an interest or concern about EMF?
2) Which audiences might want to influence utility programs because of public interest or concern about EMF?
3) Which audiences could significantly influence the attitudes of the audiences identified in #1 and #2 in regards to the EMF issue?

The answers to Question #1 might include anyone who is exposed to EMF or otherwise might see themselves as impacted by EMF. This might include:

- residents near existing lines or substations
- residents near possible future lines or substations
- utility employees

The second question deals with those people who have a position on the EMF issue and want to influence utility programs, or may be put in the position of answering questions or making decisions related to EMF, if the public becomes concerned about the EMF issue. The audiences might include:

- utility board members
- local elected officials
- state regulatory bodies
- EMF activists (people from either within or outside the community who are organized to express their concern about EMF)
- Labor union officials

The third question deals with the fact that attitudes held by many of the target audiences will be influenced by other people in the community, such as:

- members of the scientific/medical community
- technical staff of state and local governmental agencies
- media

- EMF activists
- Labor union officials

Even though these people may not be your primary audience, you may be more effective in reaching your primary audience by designing a program to communicate with these audiences. The primary audiences often view these "amplifying" audiences as more credible than the utility, because they don't see them (rightly or wrongly) as having a self-interest in influencing the result.

Now that you've listed your audiences, go back through and establish priorities based on what you know of your organization's program. For example, if you know that you will be proposing to build three new power lines in the next three years, you might want to establish a priority of reaching those three communities with information about EMF before you begin siting the lines, or, alternatively, perhaps you need to upgrade the opportunities for public participation in siting those lines. Or perhaps you believe that EMF could become such a big issue in the next year that your Board of Directors may want to get involved in reviewing your EMF policy. Or perhaps you are concerned that the state regulatory board will react to public concern by setting a limit on EMF exposure at the edge of the right-of-way even before the science is clear there is a problem. Exactly which audiences are a priority will vary from utility to utility, so you will need to establish priorities that fit your specific circumstances.

9.1.4 Develop Risk Communication Objectives

Now, develop one or more risk communication objectives for each priority audience. This simply means that for each target audience you answer the question: “What do we hope to accomplish with this audience?”

One strong word of caution, however: **Efforts to convince the public that the utility’s viewpoint is correct are likely to backfire.** Most people sense when they are being “sold” something, and either discount the value of the communication, or react with resentment. A utility can say “here are the facts, and here’s how we interpret them,” but you’ll have trouble going much further. Remember, the utility is already seen as having a self-interest in the outcome, either in terms of avoiding expensive actions to limit exposure, or simply having the political clout to obtain necessary permits or authorities. As a result, risk communication from a utility is already somewhat suspect. You’ll be held to a higher standard of objectivity than virtually any other actor in this situation.

Also, at this point in time there isn’t any single “right” interpretation. In fact, the utilities in your adjoining service territories may not even agree with your interpretation, and enough people will know this that it will undermine your credibility if you pretend that yours is the only possible interpretation. So be sure to acknowledge the uncertainty that exists, to protect your credibility for the future.

Finally, everything that has been learned about risk communication suggests that it is most effective when it is <u>two-way</u> communication or <u>interactive</u>. It won’t work if you just set out to sell “the party line.” Your programs will need to be designed to have a genuine dialogue with your audiences.

So what objectives are legitimate? You might legitimately set objectives regarding:

- The amount and kind of information an audience has before being asked to make a judgment.

- The atmosphere in which the risk communication takes place, e.g. that communication about EMF risk take place in a non-adversarial and open-minded manner.
- The timing of the risk communication, e.g. before a specific project is being discussed, or before EMF becomes controversial in the community.

Putting this into practice, objectives might be something like this:

"Provide the Board of Directors with a balanced summary of the EMF research before the public asks them to make decisions related to EMF (such as undergrounding power lines)."

"Provide every reporter (in a defined area) with full and complete information on the EMF issue at least six months prior to announcing our intent to site a transmission line in that area."

"Establish a program to provide full information on EMF to those technical, medical, and scientific people in the community to whom the public is likely to turn for independent judgments in the event of controversy."

9.1.5 Identify Program Components

Now you need to develop specific programs to accomplish your objectives. To do this you will need to: (1) identify the most effective communication mediums to reach the targeted audience, and (2) select the most effective communicators:

Identify Communication Mediums

The question you must ask is: "What is likely to be the most effective mechanism to reach a targeted audience?" If your target audience is local physicians who might be called on to give an independent judgment on EMF in the event of controversy, then the most appropriate mediums would probably include the actual scientific papers, and related commentaries on those papers. While you might want to make those same papers available to your Board of Directors, few members of the Board will have the scientific background needed to analyze those papers. You might do better, for example, to bring in several credible EMF experts and let the Board quiz them. Or, the Board may be interested in evaluations by such bodies as EPRI, the National Academy of Science, etc. The media will be particularly interested in evaluations from entities other than utility industry sources. Also, because the media's prime concern is "balance," the media will want to see materials from "the other side." [Give it to them, without protest]. If you set an objective to reach an entire community, decide whether its best to reach this audience by taking out advertisements in the paper, arranging for feature stories on the issues, or doing EMF measurements in people's homes.

Identify Communicators

Side-by-side with your discussion of communication mediums will be a discussion of who will be the most effective communicators for a target audience. A physician will be most influenced by another physician. While media people value those who can communicate in simple, everyday language, they'll also want to talk with people who have adequate technical credentials. They're also likely to want to follow up with the names of outside resource people, to verify that the utility has provided them with "the straight scoop." Until the Board of Directors is comfortable with the EMF issue, they too may want to talk to outside experts who can verify that the utility's program is reasonable.

The key point, of course, is to match the communicators with their audience. Always ask yourself the question: "Who will be the most credible source for this particular audience?"

So what might these programs look like? The list is only limited by your creativity, but here are a few of the programs that utilities are already carrying out:

- A number of utilities offer to conduct measurements in people's homes, so that they can see what the fields are related to power lines and appliances in the home.

- One utility has carefully targeted those influential people it believes will be called upon to render independent judgements on EMF in the case of controversy. For example, they have targeted the state medical association, school administrators, the state real estate board and others. They contact these entities, identify the person(s) in the organization who are consider their “expert” on such issues, then provide all requested information to that individual.

- Several utilities prepare advertisements giving the background on EMF, and purchase advertising space in newspapers and/or magazines.

- Some utilities set up a speakers bureau to make presentations to civic groups, appear on television and radio talk shows, etc.

- Some utilities have set up symposia on the EMF issue, to educate both employees and influential people in the community.

- Some utilities conduct regular tail-gate meetings with electrical workers to discuss EMF, or even take EMF measurements around substation equipment.

9.1.6 Develop Detailed Risk Messages

Since there may be several programs, and numerous communicators, it’s going to be essential that you communicate a consistent message. At the same time, it’s also important to target your messages to your audience. This apparent contradiction is resolved by constructing your messages in a hierarchy or “message-logic” such as those shown in Section 8. At the top of the hierarchy are *primary messages* which reflect a utility’s basic philosophy or policy on the EMF issue. Then there are a number of *supporting messages,* each of which is consistent with the primary messages. However, secondary messages can also be tailored to reflect the interests of a particular audience. Those communicators who are speaking to physicians, for example, may develop secondary messages that are different than those used by people communicating to utility electrical workers. The key questions to ask are: 1) Will this message attract this audience’s attention?; 2) Will this audience understand the message?; and 3) Will the message be credible to this audience?

Remember these pointers about communicating your messages:

- Use graphics to make things understandable (and appeal to people who learn things better from pictures than words).
- Use visually attractive formats—with questions and answers, side-bars, and bullet points—to make materials accessible.
- Avoid technical jargon.
- Use clear, straightforward, and unambiguous language.
- Use examples to explain technical concepts.
- Summarize or repeat primary risk messages.
- Rehearse responses to questions, so that you work your primary messages into your responses.

9.2 PLANNING FOR A CRISIS

A final component of your EMF Risk Communication Plan should be an emergency response plan. EMF is the kind of issue where you may need to respond within just a few hours if you want to set the tone of the discussion. In larger organizations, it can take several days, even weeks,, to figure out who's in charge of an issue, let alone what to do about it. For many crises, you simply can't afford this period of inaction. Consider the difference in public perception of how the Tylenol poisoning crisis was handled, versus the Exxon Valdez oil spill. In one case the company came out of the crisis with its reputation enhanced and its market share protected, in the other case there has been long-lasting damage to a company's reputation. The difference is usually careful planning.

Start out by brainstorming a list of possible crises. Examples might be:

- A local community proposes to set health limits on EMF exposure at the edge of the right-of-way. The hearing is in two weeks.

- A national television program does a very one-side story on the EMF question. The local media are on the phone now.

- Results of a new research study are announced, confirming links between EMF and childhood leukemia. The media are on the phone, but nobody has even seen the study yet.

- Homeowners along a proposed transmission line pack a public meeting, shouting down utility representatives, and calling your technical experts "prostitutes." The media provides full coverage, with the controversy being the news, rather than the facts behind the controversy.

- A major state or local elected official announces that (s)he opposes siting any additional power lines unless they are undergrounded.

These are only a few of the crises that could arise, and obviously no list can ever be totally exhaustive. However, if you develop a list of the major potential crises you are likely to "bracket" the range of possibilities sufficiently to cover most contingencies.

Now think through what you need to do to handle these situations. Your plans should address such issues as:

- How the "alarm" is sounded that there is an emergency.
- Who becomes the "crisis manager," and for which crisis.
- What expertise (people) within the utility will be drawn on in the event of a crisis.
- What needed expertise (technical experts, graphics or publications people, clerical support, etc.) is available outside the utility, and how can those services be obtained in a timely manner.
- What's the utility's "message."

No one can foresee all emergencies, but experience shows that those who plan for those emergencies they can foresee usually do a better job no matter what occurs.

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SECTION 10

DEALING WITH THE PUBLIC

This section provides specific guidelines for communicating with the public about EMF in a variety of circumstances. Because some skills are basic to virtually all interactions, we'll start with a short primer on communication skills.

10.1 A COMMUNICATIONS SKILLS PRIMER

Imagine for a moment that you were anxious and worried and walked over to a blackboard and wrote "I'm really anxious and worried." Then imagine that someone else walked over to the board and erased it, and told you you shouldn't feel that way. Now you'd be tempted to get three pieces of chalk and write your feelings in great big letters. If that gets erased, then you might take out a pocket knife, and begin carving your feelings into the board.

That's a slight exaggeration, perhaps, but it captures an important principle: *resistance breeds persistence.* In other words, if people tell you what they feel, and you tell them—possibly indirectly—that they shouldn't feel that way, they are likely to persist in feeling the way they do, and may even become more vehement in how they express their feelings.

This principle applies even when what you give people in response to their feelings is a collection of facts designed to reassure them. If someone tells you: "I'm feeling anxious about whether EMF could hurt my kids" and you tell them "Here are fifty wonderful facts about EMF to show why you don't need to feel that way," the emotional message you are sending them is still: "You're wrong (foolish, misinformed, etc.) to feel that way." Instead of removing their anxiety, you've probably increased it. Instead of being viewed as someone who is supportive or caring, you're now likely to be seen as insensitive and patronizing.

Simply put: while you need to know the facts about EMF in order to communicate with the public, the usefulness of those facts in changing people's minds and hearts is decidedly limited. In fact, relying on facts is particularly deadly at the beginning of a conversation. *People who are anxious, worried, or concerned need to express their feelings, and be satisfied they are understood, before they are willing to entertain new information.* It's a bit like a full pitcher of water: you can't pour anything new into a full pitcher. Until feelings are expressed, they block anything else from getting in.

10.1.1 Erroneous Beliefs about Listening

This runs counter to many beliefs most of us carry around about what we're supposed to do when we listen. Here are some erroneous beliefs:

> *When people express worry, concern or upset, they expect me to come up with a solution.*

When people have strong feelings, their first priority is to feel understood. Whether they want you to do something about it is uncertain. In fact, in close relationships they often want us to respect their own capacity to come up with an answer. They just want to be listened to.

Even if they do want you to do something about it, they'll feel better about it if they are confident you understand how they feel. So rather than assume they want a solution from you, it's important to check that out by being sure you understand them completely before you begin to try to solve their problem.

> *If I don't talk people out of their feelings, their feelings will stay the same.*

Often we feel pressured to try to change people's feelings because we believe that we must give them new information, arguments, and counter-arguments to change their feelings. But remember the image of the blackboard: the more you try to erase their feelings, the more those feelings will persist. In fact, people are more likely to change their feelings when they feel that their present feelings have been accepted or acknowledged. If you've ever talked with someone who's a really good listener, you've probably discovered that your feelings have changed considerably in the course of the conversation. If you went back and listened to a tape recorder, you'd probably discover that it wasn't so much what that person said, but simply the fact that you "got it out" that contributed to the change in feelings. This is not to say that new information isn't helpful in changing feelings, but it's most likely to be valuable <u>after</u> people feel listened to.

There is a "correct" way to feel about a situation.

Many people—particularly people who have been trained in technical disciplines, like engineering—think it is possible to examine all the facts, then arrive at a logical interpretation of the facts, and then know the "correct" way to feel about those facts.

This may work with inanimate objects, but it doesn't work with people. Two people can look at exactly the same set of facts and one person may have an entirely different emotional reaction than the other. It's a fact that both people feel the way they do.

The reason is that in the realm of emotions, the limits of each person's skin is the outer boundary of a unique universe, an emotional reality that is coherent, even logically consistent, but only for that person. Nobody else in the world has exactly the same reality you do. While the law of gravity applies universally to everything in the physical universe, each person has a number of laws or rules about what things mean that makes sense only to that person. What's emotionally logical in your emotional reality may make no sense at all to someone else. There isn't an external standard to apply which allows us to judge the "correct" way to feel. We can admit that their feelings don't make sense to us—that's not surprising, since there are different rules in our emotional reality—but we can't say they are "wrong."

Many of the communications problems between people occur when they try to impose their own reactions on other people. But if you accept the premise that each person has a separate emotional reality, then communication consists of coming to understand each other's realities, not imposing one reality on the other.

The first step in learning to be an effective risk communicator is not, paradoxically, to learn how to communicate your thoughts and feelings, but to learn how to listen to the thoughts and feelings of the person with whom you wish to communicate.

Listening is a skill, like driving a car or working on a word processor. While all of us have learned some of the skills of listening, listening to feelings requires a specialized skill, a skill called Active Listening.

10.1.2 Active Listening

Active Listening is the skill of summarizing the emotions and thoughts you've just heard and reporting it back so the other person can confirm, alter, or expand on your summary.

People communicate both information, facts, logic—"content"—and their emotions ("feelings") about that content. Sometimes what people communicate is almost entirely content. But when they also communicate emotions, those emotions must be acknowledged in order for them to feel understood. In fact, the stronger the emotions are, the more crucial it is that the emotions be acknowledged, the less important it is to acknowledge the content.

Not only do people want their emotions acknowledged, they also want the listener to acknowledge the intensity of those emotions. To feel understood, people need acknowledgement that their feeling is relatively weak, moderately intense, a major crisis, etc. Let's look at how content and emotions are communicated in a message:

> I can't believe that you're even considering putting a transmission line behind my house. I have three kids who play out there constantly, not to mention the neighbor's kids, and now you're going to come along and endanger them by building a high voltage transmission line.

The "content" part of this message is: she believes that building the transmission line near her house will expose her children to health risks. The "emotions" she expressed might be described with words like: shocked, horrified, upset, outraged.

An Active Listening response might be:

> You're really upset, even shocked, to hear that we're considering building a line in that area, because you believe it could endanger your children.

This Active Listening response acknowledges how she feels, it doesn't evaluate those feelings as right/wrong, correct/incorrect, and so on. It just accepts the she feels they way she does. It hasn't given anything away by acknowledging this—after all, she knew she felt that way all along—it's simply refreshing for her to be sure you understand.

Her response to this Active Listening response might be: "I certainly am shocked, why to think that you would…" But this kind of elaboration is appropriate, because she is going to give you additional information, rather than just justify her original feelings. Eventually she will feel sufficiently understood that she may even be willing and able to listen to what you have to say. At a minimum, you have established that you—and your organization—are caring.

One word of caution: there is a considerable difference between acknowledging an emotion and agreeing with it. Agreeing with it might take the form of: "You're right, I'd feel that way too…" The Active Listening response allows you to acknowledge the other person's feelings even when you disagree or have a different feeling. Agreeing puts you on record as having the same feeling. This same principle applies in summarizing "content." The Active Listening response above acknowledged that she was upset because *she believed* that the transmission line endangered the children. You would be agreeing if you said: "You're upset because power lines endanger children." That response accepts as a fact that power lines endanger children. Acknowledge that this is her belief, but don't buy into that belief by agreeing with it.

When to Use Active Listening

Active Listening is a valuable skill which can be used in almost all interpersonal communication. It's particularly valuable whenever emotions are being communicated. The use of Active Listening will be mentioned in virtually all the sections below.

In particular, use Active Listening at the beginning of a conversation to be sure you understand people's concerns before you start responding with loads of facts and information. Use it to check out whether people want more information, or simply want to be listened to.

You'll find Active Listening is particularly important:

> **Whenever someone makes a comment with particularly high emotional intensity.** Strongly held feelings will be defended or justified until they are accepted.
>
> **Whenever an individual keeps repeating the same point.** This is a clear indication that this person still doesn't feel his message has been understood or accepted.
>
> **To summarize agreements.** Summarize agreements reached in conversations or in meetings, giving yourself a chance to "check out" your understanding, and also get closure so you can move on to other issues.

Active Listening is a skill that takes practice. "Knowing" about it has very little value; it is something that has to be done, just as knowing about how to play tennis is not the same as playing it. Like any new skill it is awkward at first. You may feel strained and ill at ease using the skill. You may not be sure you are using it at the right time, or appropriately.

Stick with it! These are all issues that are resolved with practice. As you use the skill it becomes a natural part of your own personal repertoire, along with the other communication skills you've used over the years. It is at this point, when it is a natural skill, that it reaches its greatest effectiveness. So "hang in" during the awkward period, until you have practiced the skill enough that it becomes natural.

10.1.3 Sending Your Messages

Let's turn to the other side of communication, how to send our own ideas and feelings to other people.

There are two psychological principles to keep in mind when working directly with the public:

> *When you are representing "the utility," the psychological impact of judgements, evaluation,s or "put-downs," is greatly exaggerated.*

When you're communicating with an irate or upset customer, it's easy to feel inadequate, even intimidated. But it's important to remember that as representative of a large organization, everything you say has an added emotional weight. It's much the same as talking to a policeman, a physician, or somebody from the Internal Revenue Service. You're not just talking to a person. Instead the conversation is laden with all your feelings about the institution or profession that person represents. Normally we see such people as possessing more power or impact than we have. They're in the "power role." The effect of the power role is to magnify comments that might be relatively innocuous in a normal conversation into perceived slights, put-downs, insults, or discourtesies. Always be aware that even a hint that you don't think they make sense, or that their feelings are silly, and they may feel very insulted.

> *People can be abusive to "roles," it's much harder to be abusive to a human being.*

As a representative of the utility you are a "role" to people, they don't know you as a person. The harsh reality is that most people feel greater permission to be abusive towards someone they don't know, someone who's just a role—the clerk at the front desk, the meter man, the city official—than to a person—Jim, Sue, Carlos, Samantha. Even when we're upset, there are certain limits we observe in how we express our feelings towards people we know.

Some people like to hide behind the role, feeling it gives them more control. The truth is that staying impersonal, and “in role,” makes you more of a target.

Principles for communicating effectively

These observations can be translated into several principles for effective communication:

“Own” Your Perceptions.

Earlier, we discussed the idea that each person has an individual emotional reality. The inner rules that shape your perceptions are different than those of anyone else. People are more likely to feel defensive when they feel their rules are being attacked, and when they feel defensive they’re not going to be open to new ideas.

So be certain to share your ideas and feelings as being strictly yours, without any implication that others ought to feel the way you do. So instead of saying:

> The way you ought to think about the research is...

say instead:

> I was confused about that when I first read it, but after I’d studied it a little more I concluded...

What makes the second comment work is there is no coercion. You are sharing your perceptions without telling the other person they ought to adopt it. Ironically, precisely because they don’t feel coerced, they’re more likely to consider it carefully.

Avoid judgments or evaluations of things others say.

When there’s an intense discussion going on, it’s easy to slip into using phrases that contain some implied judgement or evaluation. Examples of such phases are:

> That doesn’t make any sense...

That’s not the right way to approach it, the way to approach it is...

You haven’t got your facts straight...

Well, you must understand that we scientists are trained to ...

Anyone who’d believe anything they read in that magazine...

All of these phrases suggest that the other person is wrong or somehow doesn’t measure up to the highest standards (namely, us). As discussed earlier, because we are in the “power role,” comments such as these can make people feel very angry, and may make them feel like they have to mobilize the troops to get back at the “arrogant, insensitive” utility.

Also, because these phrases reinforce the idea that you are in the power role, they also reinforce the perception of you as a “role,” not a human being. This gives people permission to be more abusive.

Be as human and personal as you can.

Instead of trying to impress people with how important and knowledgeable you are, let them see your human side. Talk about things people can relate to: “My wife and I had a big discussion about electric blankets. She thought maybe we shouldn’t use them, but we eventually decided...” Use simple, direct language people can relate to. Dress appropriately to the people with whom you’re talking. All of these things actually reduce the need other people have to play power games to equalize the situation.

Many of these principles will be revisited as we explore the best way to handle specific interactions with the public.

10.2 HANDLING A PHONE INQUIRY

Before discussing the specifics of handling an individual call, there is certain preparation that should take place for all calls. This preparation includes:

10.2.1 Hot line

If you are a large utility, you want to be sure that when people call, they do not have difficulty finding the designated EMF spokesperson. It's not unusual when phoning a large organization for the phone operators to be totally unaware of the person to whom EMF calls should be referred. The result is that by the time the caller reaches the person with the information, they are already annoyed, angry, and insulted, and what might have been a good discussion starts out adversarial.

One option is to publicize an EMF hotline, a direct line to the EMF spokesperson within the utility. The alternative is to be sure that your operators all have a number to which to refer all EMF calls, and have sufficient training to recognize an inquiry about EMF. Be sure you have a back-up person for a hot-line or direct dial number, so that people can get information without playing phone-tag.

10.2.2 Messages

If you've been following the instructions in earlier sections, by now you should also have an EMF Risk Communication Plan which specifies the key messages you wish to communicate in any conversation. As discussed earlier, these messages should incorporate the utility's basic philosophy and approach to EMF, as well as supporting messages targeted at specific audiences.

10.2.3 Library

You may also wish to set up a library of EMF materials in a location which is easily accessible to the public. Provide access to a copy machine, but also allow some supervision to be sure that materials don't disappear. The library should be complete, including materials developed by researchers who believe there are health effects, and EMF activists. A library allows people to confirm the information you give them in a phone conversation, gives you something specific to suggest they do about their concern, and also shows a willingness to be open.

10.2.4 Other Services

The person answering the phone should also know what other services the utility is willing to provide. Specifically, is the utility willing to send someone out to to do measurements, does the utility offer briefings on EMF, etc.?

10.2.5 Interview Summary

A system should be developed to record all EMF calls. It should be designed to record the caller's name, address, and phone number, the specific concerns or questions, the information provided, and in particular, any commitments made to the caller. You may want to design a form that permits the person answering the call to simply check off EMF questions raised during the call. Over time, this will provide some statistical information as to the major questions people in your service area have.

10.2.6 Mail-outs

One small way to say to your customer that something happened as a result or his/her phone call is to be sure they get something in the mail after their call. Have packets of EMF information made up, so that you can send information to each caller. You may want to design the packets so that there is certain basic information that goes to every caller, e.g. the utility's policy statement, and other information that can be added based on customer interest, e.g. a summary of a specific study. Include information from sources other than your organization. Remember that in a controversial situation, you may no longer be a credible source of information, so you need to send information from other sources who may retain their credibility.

10.2.7 Taped Role-Play Practice

Before you get on the lines, do a number of role-play practice sessions in which you answering questions from callers. Tape these role-play sessions, so you can go back and critique. Do it enough times so that you feel confident of your ability to handle calls.

When answering a phone call, be aware that your job is to build trust not just provide data. What builds trust? People are likely to trust you if they perceive that you are: a) competent, b) caring, c) open to comment from the public, d) honorable and honest, and e) sensitive to outrage factors, such as avoiding comparing voluntary and involuntary risks. Of the five items on this list, only one—competence—is primarily related to your knowledge about EMF. The rest relates to how you act as a human being.

10.2.8 Guidelines for Handling Phone Calls

Here are some guidelines for handling phone calls:

Find Out Who the Caller Is

At the beginning of the conversation, get the caller's name, address, and, if they are willing, their phone number. One reason for doing this if so you don't forget at the end of the conversation and find that you can't keep commitments you made because you don't have the caller's name or address. Another reason is that once people have identified who they are, they are less likely to engage in hostile behavior. Once they are identified, they feel obliged to be responsible.

Don't be so insistent on getting this information that it becomes a barrier to communication. In particular, if someone launches into an emotion-packed comment or question, don't interrupt them to ask for an address. It's maddening, once you've launched into your big speech, to stop and deal with things like addresses. Their anger at being interrupted may get turned on the person answering the call.

Let the Caller Know Why You are the Person Answering their Call

Work out a little one or two sentence description of your background to give to callers. For example: "Thanks for calling, Mrs. Jones, I'm Ed Peters, and the reason your call was referred to me is that I'm a professional engineer (communications specialist, medical staff, whatever) and I've been assigned by (the utility) to be the in-house expert on electric and magnetic fields. How can I help?"

Listen, Listen, and then Listen Before Responding with Facts

People may be calling you with any of three motives: 1) they are anxious, and they want someone to listen to them, 2) they want to get information, and 3) they want to influence utility actions, e.g. "underground the transmission line."

In only one of these cases—when they want information—is providing them with all kinds of information the appropriate response. Even if they are genuinely calling to get information, a good job of listening before you start answering, will help you identify the specific information they need.

But if people are calling because they want to be listened to, or want to influence utility actions, a good job of listening should always precede giving them more information. In fact, if you do a good job of listening, it may not be appropriate or necessary to provide information. Sometimes the transaction is completed by listening alone.

Active Listening, a skill which was described in the section above, is an invaluable skill for letting people tell you what they really want to accomplish. Use lots of **Active Listening** responses, so people feel understood before you launch into giving them factual information.

You may also want to clarify what information they want, before you start:

> Mrs. Green, I hear how concerned you are about possible health effects. What kind of information could I give you that would be helpful?"
>
> Mr. Salzedo, I'm writing a report which will tell management how opposed you are to an overhead line. Is there further information I can give you, or how else can I help?"

Be a Human Being to the Caller.

One way to do this is to talk about EMF in personal terms: "My wife and I talked about electric blankets and decided...." or "One of my kids asked me if EMF ...." The key thing is to avoid sounding bureaucratic and impersonal. Above all the message they must get is that you are a caring human being.

Avoid jargon and numbers.

People in the utility industry have an incredible array of utility jargon. They also tend to express things in numbers or units of measure which are totally unfamiliar to the public. This not only confuses the public, and sounds bureaucratic, it also sounds like you're part of an exclusive little "in-group" from which they are excluded. So they may end up not only puzzled, but resentful.

Work your Messages In, in Response to Their Questions

In your role play practice, practice working in your key messages, so that in whatever form the questions come, you know how to respond to their questions, while still covering your key messages.

If people Demand Certainty, Summarize their Fundamental Concerns

People occasionally demand: “What I want to know is, can you guarantee me that no child will get leukemia because they lived near this line” or “Is it safe or isn’t it?” The truthful answer, of course, is that you cannot make such guarantees. But before you give this answer, recognize that this kind of demand for certainty is rooted in frustration. The frustration may be that they don’t believe the utility gives the same weight to health concerns that they do. Or the frustration may simply be with the inability of science to provide a firm answer. Either way, before you say “No we can’t provide guarantees,” use your Active Listening skills to acknowledge the frustration and the nature of their concerns:

> So you’re feeling pretty fed up with the the fact science can’t give a definitive answer, when you’re worried that it could be your child’s life at stake.

or:

> So you believe the utility shouldn’t proceed with the project at all, if we can’t guarantee there is no risk.”

The response to either of these summaries could be: “That’s right. Can you give me a definite guarantee?” in which case the answer is going to have to be: “No, based on the present level of science we don’t know whether there is or is not any risk.” But many times, people’s responses to the Active Listening summaries above will be to elaborate further on their concerns, rather than continue to make demands for certainty.

Be Specific about What You're Doing about EMF

Utilities often give rather general answers about what they're doing that sound bureaucratic and unsatisfying. For examples, some utilities say something like: "We believe more research is needed, so we're contributing to EPRI, which has a research program on EMF." Stated this way, this sounds like guilt money. Instead try: "We believe more research is needed, so through EPRI we are helping to sponsor three research programs. One is looking at..., and the other two are studying ..."

In the same way, be specific about other utility programs, e.g. "we'll come to your house and make field measurements, or we offer a one-hour briefing on EMF that will be in your community on…"

Identify Things They Can Do to Get More Information

Remember that people's perception of risk is reduced when they feel in charge. So help them identify things they can do either to reduce their exposure, or get more information about the issue. Examples include:

- Sign-up for measurements at their house.
- Come to the EMF library and check out information
- Talk to informed people in the community
- Attend a training course on EMF
- Turn off electric blankets or other field-producing appliances
- Attend a public meeting

Don't Make Any Promises You're Not Sure You Can Meet

Don't make commitments to provide information, make measurements, or otherwise respond to their concerns if there's a possibility you won;t be able to make that commitment. Under pressure, there's always a temptation to handle the situation by making commitments that we really can't keep. As tempting as it may be, people are far more offended by broken promises than they are if no promises are made.

Remember to Provide Ways They Can Verify Information

Although it's sometimes hard to accept, it's important to remember that the utility is seen as having a self-interest on the EMF-issue, so any information you give will be suspect. Provide callers with ways they can verify information: "I'll send you a copy of the original study, so you can see how they did the study" or "You could phone the Dept. of Health Services and see if they agree with the procedures we're using. Here's a number you can call..."

10.3 HANDLING A FACE-TO-FACE MEETING WITH A CUSTOMER

All of the comments about handling a phone interview apply equally to handling a face-to-face interview with a customer. However, there are some additional considerations when dealing face-to-face.

The first has to do with where to meet. There are distinct advantages to meeting on the customer's "turf," in their home, office, or someplace else where they are comfortable. Meeting someone in a large office complex sets up much of what we're trying to avoid in the interaction: it makes people think the organization is large and powerful, and they are weak and powerless; it feels bureaucratic and impersonal; it reinforces the perception that you are a "role" not a person. Also, if you meet on their turf, they are the "host," and this puts some restraints on their behavior if they become upset.

The big disadvantage of meeting someone on their "turf" is time. It takes time to get there, get back to the office, etc. You alone can judge whether the time is justified or not. When you meet on someone else's turf you also lose some control over the situation. Ironically, that's probably good. When they feel more in control, they're less likely to feel threatened, more likely to relate to you as a human being.

If you are going to meet in your office, be aware that there are many things about meeting there that may make people feel uncomfortable. If you are a large organization, visitors are usually met by a receptionist, who has people sign in, and may phone to get someone to come get the visitor. Already the atmosphere is cold and procedural.

One way to reduce the stiffness and formality of meeting in an office building is to take people to a cafeteria or coffee room first, where you can sit and talk for awhile. First of all, cafeterias are a place where informal conversation is expected. Second, the seating arrangements do not connote rank or status, so your customer can feel equal. Even if you eventually need to go back to an office to get materials, it's helpful to establish some rapport first, then go back to the office.

One of the values of meeting in a public place like a cafeteria is that it also sets some limits on behavior. Both you and your customer may have some anxieties about how intense this session could get, and both know that in a public setting things are less likely to get out of hand.

Once you're back in your office, it may be useful to draw in another utility employee, so long as (s)he can add useful and related information. A third party may reassure both people that things won't get out of hand. Also, having a second person there communicates the importance you place on your customer's visit. On the other hand, don't start involving too many people, or your customer may begin to feel overwhelmed, or begin to ask questions about whether employees of this utility have too little work to do.

A little bit of VIP treatment can be nice. For example, arrange with your boss to drop in and say hello, calling on the customer by name: "I just wanted to drop in and say hi, Mr. Franklin, Bill said you'd be stopping by." But don't overdo it, or it'll begin to look like a con job.

One advantage of being in your office is that you can take advantage of video equipment to show videos, such as those made by EPRI.

Beyond this sensitivity to the physical environment, and what it does to make people comfortable or uncomfortable, the basic conversation can proceed much as it would over the phone. Find out something about your visitor, provide just enough background to establish your credibility but not intimidate, then do lots of listening to find out what your visitor's concerns are, and what information will be useful.

10.4 DISCUSSING ON-SITE MEASUREMENTS

An increasing number of utilities are offering to conduct on-site measurements in people's homes. Their experience suggests that making these measurements not only informs the public, but reduces public anxiety about EMF, and helps people understand that the EMF issue is not just about power lines.

Naturally, as the interest in the EMF issue has grown, so have the requests for on-site measurements. Virginia Electric Power Company (VEPCO) has offered to make on-site measurements since 1970. From 1970 - 1987, VEPCO received about five requests a year. In 1988, VEPCO received 51 request, and in 1989, 103 requests.

Experience suggests an individual session takes from 1-2 hours. While the measurements don't take that long, it is normally necessary to explain (and demonstrate) a few basic electrical concepts, and discuss the EMF research, before beginning to take measurements.

In fact, some utilities are asking people who want to receive on-site measurements to attend a short briefing on basic electrical concepts and an overview of EMF research before signing up for measurements. This reduces the amount of time on-site at an individual house. Special arrangements are made for the elderly and disabled.

Other utilities believe that the informal interchange on-site is the most important part of the interaction. Some even give customers a quick demonstration on how to take measurements, and then turn the measuring instrument over to the customer, so that they can measurement appliances and other field sources of interest. This has considerable advantages from a risk communication perspective because if make the risk more familiar, and therefore reduces the perception of risk.

A description of the procedure to follow in actually making the on-site measurements is provided in the next section.

While it will take some practice to get skilled at making measurements, the real challenge will be to deal with the questions that customers have about the significance of those measurements. The hard part of on-site measurements is dealing with questions like: “We got a measurement of 400 mGauss when my stove is on, does that mean it’s unsafe to use?” or “You got a reading of 10 mGauss at the edge of the ROW, and the Denver study said that 2.5 mGauss causes leukemia. Does that mean it’s unsafe?”

10.4.1 Frequently Asked Questions

Here are some answers to some of the more difficult questions that are likely to arise:

> What level of exposure is safe?

It sure is frustrating, because there are conflicting studies, and the media certainly makes it sound scary, but the truth is that we don’t even know that 60-Hz electric and/or magnetic fields pose a health hazard at all, at any level of exposure that could occur near electric facilities. That’s still being studied, and we’d love to know the answer.

> I’ve read that the Denver study says that 2.5 mGauss is the safe limit? Why are you saying that’s not right?

Several people who have written articles for the media made a simple mistake, and it got picked up by a lot of newspapers. Researchers had to divide the people they studied into two groups, those that were exposed to electric and magnetic fields (the experimental group), and those who were not (the control group). The problem is that everyone is exposed to some level of EMF. Even the earth itself gives off a magnetic field. So the researchers decided, somewhat arbitrarily, that people who were exposed to 2.5 mGauss or more were in the "exposed" group, and people below 2.5 mGauss were "non-exposed." It was a simple cut-off point, and people in the "exposed" group may have been exposed to fields considerably greater than 2.5 mGauss. Unfortunately, some people writing articles about EMF misinterpreted this cut-off point and decided that it meant it was "safe" below 2.5 mGauss. They simply misunderstood what the cut-off point was about, and unfortunately that error got repeated in a lot of articles. Once someone makes a mistake like that, it tends to get picked up by a lot of other people and passed on as if it were true.

Are there any EPA or state standards that can be used to tell what's safe?

There aren't any federal public or occupational exposure limits for 60-Hz electric or magnetic fields.

A few states have established electric field limits, and two states have recently set magnetic field limits for transmission lines. These are:

New York: 200 mG at the edge of the right of way.

Florida: 150 mG at the edge of the right-of-way for 230 kV transmission lines; and 200 mG at the edge of the right-of-way for single-circuit 500 kV transmission lines

Both states acknowledged that these limits were not based on health research, because the research still hasn't established that there are health effects.

Just as a standard of comparison though, the readings we got outside your house were [give the reading actually taken at the person's house].

Is continuous exposure, such as that from a transmission line, worse than short-term usage, like that from an electric razor?

Again, we have started out with the problem that we don't know for sure that any exposure constitutes a health hazard. The original studies all looked at sources external to the home, such as transmission lines, distribution lines, and grounding sources. Some of the more recent studies hint, but certainly don't prove, that *changes* in the magnetic field may pose greater risk than the *level* of the field. If this were true, then the research should begin to look at exposure to household appliances.

> Is there any different in the kind of fields from power lines and the kind of fields from household appliances that would make power lines more dangerous?

No, in fact, it can be argued that appliance fields should be of more concern, because levels can be much higher than near power lines.

> Are transmission lines more dangerous than distribution lines?

As you know, transmission lines are the lines that carry large amounts of power over considerable distances—they are like the "freeways" of the electrical system. Distribution lines bring power directly to your house—like a local street.

Again, we don't know if either is dangerous, and even more, we don't know what characteristics of electric and magnetic fields would make them dangerous. The nature of the fields is the same, although the level of the fields is higher near transmission lines.

Two of the childhood cancer studies most frequently mentioned (Wertheimer and Leeper, 1979, and Savitz et al, 1988) were concerned with distribution lines and grounding systems.

10.4.2 Other Guidelines

Beyond these technical questions, the fundamentals of how to handle the interaction are virtually identical to those in a phone call or face-to-face meeting. Basic guidelines include:

- Let the customer know why you are the person making the measurements.
- Listen, listen, and then listen before responding with facts.
- Be a human being to the caller.
- Avoid jargon and numbers
- Work your messages in, in response to their questions
- If people demand certainty, summarize their fundamental concerns
- Be specific about what you're doing about EMF
- Identify things they can do to get more information
- Don't make any promises you're not sure you can meet.
- Provide ways they can verify information

Beyond this, do everything you can to make this an informal, hands-on kind of session. Discuss each measurement with the homeowner, keep them engaged in the results. If the equipment is suitable, get them involved in taking some of the measurements. This makes the whole thing less mysterious. It also creates a sense of mutual exploration.

10.5 COMMUNICATING WITH EMPLOYEES

One of the key target audiences for any utility has to be its own employees, particularly electrical workers. First of all, many electrical workers work near fields that can be considerably higher than those in homes near power lines. So if there is a risk—and this is still unknown—then they are probably experiencing the highest risk. Utilities have an obligation to inform their workers. Imagine the loss of credibility that a utility will suffer if it doesn't inform its workers, and later it is shown that workers were exposed to elevated hazards! It's not only an ethical issue, but potentially an issue of legal liability, and is likely to become the subject a discussion with labor unions in the years ahead.

Beyond the "negative" side of the question, though, employees like to be involved. They like to be kept fully informed, and be able to represent the utility fairly and in an intelligent manner.

In small communities there is one other extremely important reason for involving employees: in small communities, your workers out on the ground—linemen, meter readers, and other service personnel—are likely to be the people that customers will ask about EMF. In small towns, communication is credible when you know and trust the person talking. Fancy degrees and technical knowledge are often less important than personal credibility. So whether the interaction takes place in the coffee shop, or on a service call, your field personnel are your best single way to communicate about EMF. But if they are misinformed, they will also be very good at communicating misinformation. It's up to the utility to provide its employees with the training and the tools they need to represent the utility well. In addition to training employees about EMF, you might want to provide all your field personnel with a briefing binder on EMF, as well as packets of information to hand out when the occasion arises.

Numerous studies show that employees prefer to get their information about utility operations on a face-to-face basis. So use tail-gate meetings or small group meetings in preference to large briefing sessions. This allows people to interact, ask questions, discuss the issues.

Design the sessions carefully, allowing time both for a presentation and for discussion, questions, and interaction. Avoid jargon or numbers, just as you would with the general public. Use graphics to make things easier to understand. Select presenters who are believable and credible to the audiences they will be addressing.

Although employees are usually somewhat more inclined than the public to accept information from the utility as being credible, don't expect that just because they are getting paid they should accept the utility's position as "gospel truth." People get paid to perform work, not to accept a particular set of beliefs. So continue to present all the diversity of opinion that exists on the EMF issue, and be aware that it increases your credibility if you use information sources other than those from the utility industry. Employees will be just as sensitive as the general public to the fact that the utility industry has a self-interest, and therefore might be inclined to interpret the research in a manner consistent with that self-interest.

Also, be aware that even in small group meetings it can be risky to ask questions. It may be useful to set up other mechanisms, such as "question boxes" where people can ask questions anonymously, or send out a short questionnaire to find out what issues are of most concern. Once you know the questions people are most concerned about, make a point of answering them, even if they don't come from the audience.

If you are working with union employees, you may want to consult with union officials during the preparation of the presentation. If you can get them to be a party of the team making the presentation, it will increase the credibility of the presentation. There may also be political benefits for the unions: "We're looking out for your health and safety."

Several utilities have found that one of the most effective ways to educate employees is by actually doing field measurements in places people work. Just as with customers, it's even better if you can show the employees how to use the meters, then let them do the readings. This has the effect of making EMF more familiar, less arcane, and therefore less scary. Also people may be surprised at the nature and location of the highest level fields.

If you have an employee newsletter, you may want to use it as a mechanism for educating employees. Be aware, though, that for the information to be credible it can't just be a statement of the utility's position. Acknowledge the uncertainty, perhaps even showing more than one viewpoint, then present the utility's position.

Here are some additional suggestions:

- Designate a person who is the contact point for employee questions about EMF, making sure that employees know that person's direct dial number.
- Record a message on a voice mail system that permits employees to call up and hear an update on any new research on EMF, as well as a statement of the utility's position.
- Send all materials and news releases on EMF to employees—they often feel like they're the last to know.

10.6 CONDUCTING A BRIEFING FOR LOCAL OFFICIALS

Occasions may arise where it is appropriate to provide a briefing on EMF for local officials, either staff or elected officials. One of the first points to remember in planning for a briefing is that timing affects your credibility. If you are providing a briefing on EMF, and the utility is not currently seeking approval for a project, you may be viewed as a knowledgeable and credible source. If you are proposing to build a project, you will be viewed as having a self-interest as a project proponent, and people will view information presented by the utility as more like propaganda than scientific evidence. As a result, if you are a project proponent, you may have to think about bringing in outside experts, who will be credible to local officials. Even paid consultants can be suspect—after all, people think, they're getting paid to say what they say—so be very aware to pick people who will be believable. If consultants have built a relationship with these local officials in the past, for example, they will be more credible. If the experts you bring along have an organizational affiliation that has a reputation for neutrality and objectivity, that will increase their credibility.

Talking with local officials, particularly technical staff, has some peculiar problems. Local officials are particularly sensitive to any implication that they are less knowledgeable or technically competent than the utility. Above all, they don't want to be talked down to or patronized. Yet it is extremely unlikely that they will be knowledgeable about EMF. In particular, very few people know enough about epidemiology to understand that questions about research design are not just quibbling, but may make the difference between increased knowledge and a totally meaningless study.

The general rule to follow in making presentations to local officials is to make that presentation in simple, everyday language, but provide full technical and scientific documentation for them to read on their own time. This way you make sure you got your message across, but you've indicated that you understand they are technically competent enough to deal with the technical data. This rule should also be observed with elected officials, although they will usually turn the technical materials over to their staff.

It's also important to understand that there may be occasional major gaps in local officials' knowledge about the basic physical facts of electricity. Reading through newspaper clippings about EMF controversies it's startling to discover that utilities sometimes never make the point that fields drop off rapidly based on physical distance from the power line. As a result, people living a mile away from a transmission line may be as worried as people living right next to the line. Because it is common knowledge for everyone in the utility that fields drop off quickly, utilities may fail to mention this fundamental fact to the media or the public.

Because local officials don't want to feel patronized, you may need to find a way, such as with the use of graphics, to make sure that basic electrical concepts are covered, without even hinting that the audience doesn't already know that.

Otherwise, all the same principles apply in these presentations as to any presentation to the public: use graphics; avoid numbers and jargon; be as human and down to earth as you can be.

One of the other important principles in working with elected officials is to understand their political realities. There are many cases, quite simply, where there is very little in it for an elected official to appear to side with the utility, particularly if they know the utility has the authority to proceed with the project anyway. Their constituency may not receive any benefit from the project, nor are there political costs when demanding that the utility be more sensitive to health concerns. With luck and enough pressure they might even persuade you to underground the line, and then they'll really be heros!

It's your job, in making your presentation, to make it safe for local officials to be supportive of you. And if they still feel a need to posture against the utility, it's also your job to understand that this is not aimed at you personally, and to take it in apparent good spirits (even if you mumble a bit as you're leaving the meeting).

A final point: always reaffirm shared values. Local officials have many of the same problems and concerns you do. If you understand their values and concerns, you can often tailor your presentation so that it stresses these common values. In particular, most local elected officials themselves face difficult decisions balancing health and safety risks versus economics on issues such as siting of solid waste facilities, permitting of toxic waste transfer stations, waste-to-energy incinerators, etc. You may be able to describe the utility's thought processes in a way that relates the EMF issue to these other issues where there is also considerable scientific uncertainty.

10.7 CONDUCTING PUBLIC MEETINGS ON EMF

There's a long-standing tradition in America to hold public meetings to discuss issues of concern to the public, and therefore there's a natural tendency, even an expectation, that utilities should hold public meetings on the EMF issue. That may or may not be wise, and even when it is advisable, the meeting should be carefully planned to avoid situations where there's no chance of discussing the research in an objective manner.

10.7.1 Risks of Holding a Public Meeting

If you are holding a public meeting about EMF, and its related to a proposed transmission line, the hard reality is that the audience will consist primarily of people who are: 1) uncertain, but somewhat anxious, about EMF risk, and 2) people who are opposed to the project, and have a political stake in emphasizing its potential risks. There is rarely an advocate for the project, except the utility, and even if a local businessman appears and speaks about the importance of the project to economic development in the community, he is likely to be shouted down with cries like: “You’re putting the almighty buck ahead of the life of my child,” or “See, economics is all they’re interested in, they don’t care about the health and safety of our children.”

So a part of the audience comes prepared to do battle and convince others how significant the risk is, and the rest of the audience is at best neutral. The result is that the project opponents have the numbers and the willingness to dominate the meeting, even turn it into a rout. They may shout down speakers, intimidate people from speaking, and generally create a kind of mob mentality. The people who come into the meeting genuinely wanting information either leave the meeting convinced there is a risk, or upset with the utility for holding such an unpleasant meeting. Either way, the utility loses.

Whether this situation could happen in your community depends on what groundwork you’ve laid with the community beforehand, whether your meeting occurs while the utility is proposing a project, and whether there’s organized opposition to the project.

While public involvement is important, public involvement does not automatically mean public meetings. It may be far better to address the concerns of individuals by meeting with them individually in their own homes, or in some groups. As a minimum, you need to be sure that your public meeting format lends itself to a balanced discussion of the issue.

10.7.2 Selecting a Meeting Format

Public participation experts are virtually unanimous in their advice: **Don't use public hearings. Hold smaller, more informal meetings.**

At public meetings, leaders of groups or constituencies have to defend their constituency in front of a large audience. Their standing with their own constituency rests on how well they defend that interest. This has the effect of exaggerating differences and causing people to take more extreme positions. People, who before the meetings could appreciate the complexity in the scientific research, will, during the meeting, present the best case for their group that they can, often at the expense of acknowledging those uncertainties and complexities. There is little learning taking place during public hearings. They provide an opportunity for people to be seen taking fixed positions, but there is rarely any consensus building that comes out of that.

What are some of the alternative formats?

> **Open Houses:** Several utilities have used open houses successfully. When you hold an open house, you invite people to come any time during an extended period, such as all day, or an afternoon and an evening. Typically, displays are set up around the room. One display might include maps showing alternative alinements, so that people can see where their property is in relationship to alignments under consideration. Another display might include graphics explaining basic electrical concepts. Another display might be a demonstration of the use of equipment to take field measurements. Yet another display might be a circle of chairs around an EMF research expert, so that people can sit down and discuss the research.
>
> People who come to the open house may be encouraged to follow a certain progression in moving around to displays or experts, or a greeter at the door may simply point out where everything is, and let them pursue their own interest. Attendees may stay as little or as long as they want.
>
> In many ways what an open house does is permit you to have one-on-one or small group discussions with a number of people. Because things are

informal, they're less likely to be adversarial, and more likely to permit a real discussion.

Open houses are not fool-proof, however. One utility recently held an open house and found that project opponents assigned one individual to each display, all day, and these individuals would interrupt conversations with provocative questions or challenging statements, so that it was difficult for utility staff and experts to have a real conversation with people who wanted information.

Open houses can be effective in getting information out to the public. There are situations, however, where people want to be heard, not just informed, and then open houses are not suitable. However, open houses can be used effectively in conjunction with other public meeting formats. For example, you might hold an all-day open house, to proceed an evening public meeting which uses another format. People who want to become better informed before they participate can come during the day to get prepared for the meeting. Those who just want information have the option of attending only the open house.

Coffee Klatches: Coffee klatches are informal small group meetings, usually held in someone's residence. If people along a proposed route are concerned about EMF, for example, you might ask one resident to invite neighbors in to discuss the issue. Typically, coffee or cookies would be served, and there would be informal conversation in the living room. Utility staff might make a brief presentation, but the emphasis should be on informal discussion, questions and answers, etc.

There are several advantages to coffee klatches: they're informal, people are relaxed and comfortable; you get to know each other as people, not as roles; it's harder for opponents to dominate or intimidate in the informal setting; and people are usually on good behavior when they are a guest in someone's home.

The disadvantage to coffee klatches is that you may need to hold a number of them if you want to reach all the people along a proposed route. It can be time consuming, but it may be worth it.

Meet the Press: Sometimes the level of interest is so high that you simply have to have a large public meeting. One format that may be useful in such a circumstance is to use a modified version of the "Meet the Press" format used on Sunday morning television news shows.

First, you select a panel of technical experts on the EMF issue. If there are project opponents, one or more of the panelists should be someone they recommend. Then you select a panel of interviewers from the media. Again, there should be some discussion and agreement on who should be on the media panel, so that project opponents are satisfied that the interviewers will ask the tough questions. There would also be a moderator, who should not be someone from the utility. The moderator's task is to lay out the ground rules, keep track of time limits, and move interviewers and experts on to the next topic.

Just as on the news shows, the experts are asked to make a brief statement, then are "grilled" by the reporters, on a rotating basis. The media interviewers are supplied with a full set of materials prior to the meeting, so they can prepare for it.

The fundamental idea behind this meeting format is that reporters are good at asking those questions that are of concern to the public, they are sufficiently aggressive to be credible, but they are also respectful of ethical considerations such as balance. What you hope to get is good, tough questioning that brings out the information of primary concern to the public. In effect, the reporters act as a kind of surrogate for the public, bringing out the main points.

The "meet the press" panel would be followed by a break, and then an open meeting at which the public could express themselves, or ask questions. Normally the questions are somewhat muted, as most of the ground has already been covered.

Here are some general guidelines to follow in setting up a meeting:

- **Select a meeting format that's fair to everybody.** You don't want a meeting format that stacks the deck stacked against the utility. But if you set up a format that's unfair to project opponents, then they'll have little stake in staying within any ground rules. One example of an unfair meeting structure would be one in which the utility gets to present its point of view for two hours, and only then can others express a contrary view. The truth is, they won't last the two hours, and will instead engage in confrontation.

- **Consider having the meeting run under the auspices of an organization other than the utility.** If the leader of the meeting is a representative from an organization that is perceived as neutral, fair, and objective, then there's less likelihood that people will engage in confrontational behaviors during the meeting.

- **Hire a professional meeting facilitator.** Even if the meeting is being set up by the utility, it may be in the utility's best interests to hire a professional facilitator to run the meeting. The utility may have a spokesperson who opens the meeting, but then the meeting is turned over to the facilitator who sets ground rules with the audience. Why hire an outside facilitator? First of all, facilitators have many meeting leadership skills that others may not have—after all, they do it for a living. Second, leadership behaviors that may be acceptable from a facilitator may be seen as manipulative from a utility employee.

- **Give people a hand-in response form.** In a typical public meeting, only a small percentage of the attendees ever speak up. If you want to know what the other people feel, give everybody a hand-in response form that they can fill out on a voluntary basis and leave at the end of the meeting. The response forms can ask people to express opinions, identify questions or unresolved issues, or even comment on how the meeting was conducted.

- **If the meeting is likely to be controversial, get agreement on the meeting format in discussion with project opponents.** To the extent possible, remove the way the meeting is designed and run as an issue. If there could be confrontation over how the meeting is being run, meet with project opponents beforehand and work out a mutually acceptable format. Don't let them trample the utility, or the rights of other citizens, but also respect their fears that you might stack the deck against them.

- **Make people comfortable as soon as possible.** If you've ever attended a public meeting, particularly one in a strange place with people you don't know, you'll remember how awkward and ill-at-ease you felt when you first arrived. Do everything you can to make people comfortable quickly. Have greeters at the door who lead people over to coffee and cookies, show them maps of the proposed alignment, and identify people they can talk to. Don’t let utility employees huddle in groups telling utility stories. That sets up an in-group/out-group feeling. Those employees should be meeting people, talking with people, starting to be a human being not a role.

- **Provide handouts.** Utilities should have handouts available. They are an opportunity to present your message. But they should not be one-sided. They should represent the issue as complex and uncertain as it is.

10.8 WORKING WITH THE MEDIA

People from the media aren’t really the public, but they are often a primary channel by which you can communicate with the public, so it’s important to know how to work with the media.

10.8.1 Before There is a Controversy

People who become reporters are often by nature challenging and skeptical, but if they weren’t, years of working with people who are trying to use the media for their own ends would make them so. So the media are going to be particularly suspicious of a utility once the utility is a proponent for a project. So if you hope to influence the media, one of the first rules is: **Establish relationships with reporters long before troubles start.** Like everybody else, reporters trust people with whom they have a prior relationship, people who have a track record of providing accurate information, even when it is embarrassing. If you have an established relationship, then become a party to a controversy, you may still retain some influence. Otherwise, everything you do will be slightly suspect.

So establish a relationship before there is a problem. In particular, get to know those reporters who are frequently assigned to stories on science, technology, planning, or energy issues. Go and visit newspapers, radio and television stations periodically, getting to know the people who work there. Don’t forget to develop a relationship with people on cable television—they're becoming increasingly more important as a news source.

Get to know reporters by name. Once you know their names, personalize all news releases with a personal note or personally-addressed letter. Other ways to build relationship include joining the local press club, or being active in community affairs, so you meet in other contexts.

Also become aware of the differences between the media. Newspaper, radio, and television work to different deadlines, can devote very different amounts of space to any one story, have somewhat different audiences, and even have different priorities. By understanding the nature of each medium, you can communicate your message better. For example, if you want to communicate a long, complex story, television isn't the place for you. Television wants 30-second sound bites, and rarely devotes even 2-3 minutes to any but the very biggest stories. It's also a very visual medium, and concepts don't photograph well. On the other hand, it is also the most affecting emotionally, with the greatest ability to move and change people. Each medium has its strengths and weaknesses, and it's your job to know these, and respond accordingly.

Before a controversy on EMF erupts, provide reporters with sufficient background information to provide a context for future studies. This background material might include an overall briefing document, a list of frequently-asked questions and their answers, a statement of utility policy towards EMF, a description of any programs being carried out by the utility, copies of key studies, and a list of people to call for more information. Even if reporters do not read this material before the story becomes newsworthy, they will turn to it once the issue becomes important. Above all, you want to be sure that they have a context in which to put comments made by project opponents, or even announcements of new research results.

10.8.2 During A Controversy

EMF has become a big media issue, and many utilities are going to be dealing with the media on the issue. Here are a few guidelines.

- **If you have the information first, release it, with your own messages.** The only control you may have over the situation is right at the beginning.

- **Abandon the fantasy of control.** In a crisis situation you cannot control the way a story is reported. All you can control is what you do. This is why you've prepared an EMF Risk Communication Plan, so that in a crisis you'll do what you planned when you had the time to think the issue through.

- **Speak your messages, whatever the questions**. People who are good with the media go into any interview situation knowing what messages they want to communicate. You can't control the questions, but to be effective, continue to find ways to work your messages into your responses, no matter what the question is.

- **Respect media deadlines.** What's reasonable response time in the business world is not reasonable in the media world, at least not if it means missing a deadline. If they can't reach you in time they'll simply report: "Spokesmen from the utility were not available for comment." In media talk that means "I couldn't locate anyone before I had to file my story." But the public reads that comment as: "The utility is stonewalling on this issue."

- **Define who in the organization answers media question on EMF, and who the backup is.** Your risk communication plan should specify who speaks for the utility on the EMF issue, and all media questions should be referred to that person. But also have a backup ready, so that you meet the reporter's deadline if the in-house EMF expert is not available.

- **Assume everything is on the record.** You can ask reporter to go "on background," which means you give them background information they can use on a story, but without quoting you directly. But practical experience suggests that the best rule to follow is don't say anything you're not willing to have appear in print.

- **On television, speak your messages in "bites" no longer than 30 seconds.** They may tape an interview for several minutes, but on the evening news, it's likely that they'll use more than 30 seconds. So be sure you say your primary message quickly, succinctly, and if possible, colorfully.

- **Avoid speculation.** Speculative comments almost always get played back some way other than the way you intended.

- **It’s OK to praise a good story, but don’t “butter up” reporters.** Reporters are very sensitive to being “conned.” Sincere praise is appreciated, but if you overdo it, they won’t trust you.

- **Don’t attack the media.** People in the media can dish it out better than they can take it. You rarely win anything by attacking the person who is going to interpret your comments to the public.

- **Emphasize what is being done.** Put an emphasis on actions and programs that the utility is engaged in to address the issue.

- **In the event of a bad story: correct major media errors immediately, so they don’t get repeated.** You can’t undo the damage from a bad story, but you do want to make sure that other reporters don’t pick up the mistakes and keep repeating them (a not uncommon phenomena). If mistakes are minor, let them go by. If you do want to take your concerns to a reporter’s superior, don’t do it until after you have expressed the concerns directly to the reporter. Tell the reporter what you’re going to do and why. A low key approach is likely to accomplish more than a frontal assault.

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SECTION 11

TVPPA EMF MEASUREMENT PROGRAM

11.1 EMF MEASUREMENT OBJECTIVES

The predominant concerns about electromagnetic fields (EMF) likely to be expressed to TVPPA members are related to fields that exist in residences and those locations outside the home where small children are likely to spend time. Most concerns of member's employees are related to exposure in the course of duties. This phase of the EMF program is designed to assist members who choose to offer measurement services in obtaining information on field strengths in these locations.

Magnetic fields are currently producing the most concerns. Electric fields have been studied for some time and have not been identified by researches to have adverse health effects. However, the program does not discount the possibility of providing measurements should there be requests for them.

Acceptable or unacceptable field levels have not been established. Rather, the most reasonable measurement programs have sought to describe comparisons of the levels of exposure of individuals in different locations and performing different activities. For instance, comparisons are made of levels outdoors and indoors or the levels measured in the vicinity of electric appliances compared with levels observed elsewhere in the home.

The protocols of the TVPPA measurement program are focused at this time on residences and schools. Specialized measurements (such as in the vicinity of industrial equipment) will not be treated until the program has gained some maturity and those collecting data have the experience to make measurements in these environments. Also the measurements and instrumentation are restricted to 60 Hertz and near 60 Hertz fields.

11.2 PROTOCOL OBJECTIVES

These protocols are the general instructions for making measurements of electric and magnetic fields. They have been designed to provide guidance in making measurements which will give consistent results throughout the Tennessee Valley region. There are two components of the protocol—a structured phase to give uniformity in data collection and an unstructured phase for demonstration and answering specific questions of residents.

These protocols give the instructions for which instruments to use in data collection, how to use the instruments, which data to collect, which objects to collect data from, and how to conduct the measurements.

11.3 INSTRUMENTATION

The instrument required for measurements of the magnetic field is a gaussmeter. It should be capable of direct readout in units of milligauss. The instrument for measurement of an electric field is one that measures potential gradient, kV/meter. The instruments should be portable and battery operated.

Magnetic fields have complex structures which change with time. They can have components that exist in any of three dimensions and there is, in general, no means of predicting their strengths or orientation within structures. To measure these, a meter with sensing coils arranged in three perpendicular axes is used. The three-axis meter electronically computes the square root of the sum of the squares of the components of the field. There are no particular requirements in orientation of the meter during data collection. For consistency, the operator should keep the meter horizontal if possible.

The alternative to the three-axis meter is one that has a sensing element that detects only the directional component of the field. Most of these have a flexible lead between the sensing coil and meter, making orientation of the coil a simple task. This is the meter of choice for making measurements near objects producing fields. The operator of the meter should always rotate and move the pickup element until a maximum reading is obtained.

The frequency response of any meter used is a consideration. The less expensive instruments tend to have wide bands of sensitivity while the more expensive instruments have filters to limit the response to a 60 Hz field and its lesser harmonics. The gain of the circuit which measures the magnitude of the field may be higher for frequencies above 60 Hz than for 60 Hz in some instruments. This introduces errors in the reading.

There are instruments available from TVPPA on a short-term loan basis with which to make field measurements. The three-axis meter is the EMDEX-C from Electrical Field Measurements. This meter has an accessory measuring wheel for improving the efficiency of data collection in mapping tasks. The EMDEX-C is capable of measuring both electrical and magnetic fields. The single-axis meter is the Electrical Field Measurements model 116B. This meter will only measure magnetic fields.

11.4 MEASUREMENT PROCEDURES

11.4.1 General

Permanent records of the measurements are important. This information should be kept on file in the event follow-up visits are required or historical information is needed in the future. A sample data sheet is included in this document. It may be copied if needed or used as a guide to point out the minimum information needed.

Basic information such as the name of the person for whom the measurements are being made and the address of the property where measurements are being made should be included. The record should also show the name of the person making the measurement, the date and time measurements are made and the instrument used. The reason for which the measurements are being made should be included.

A careful sketch showing the area measured should be included in the report. An effort should be made to have the sketch as complete and accurate as possible. Distances can be measured either with the tape or wheel that are provided with the instrument package.

11.4.2 Residential Locations

11.4.2.1 Outdoor measurements

Make an accurate sketch of the property. Locate the major structures and objects likely to be the source of fields, and objects likely to perturb (distort) the field on the drawing. Objects which are sources are transmission and distribution lines, transformers, service cables (above or under ground), meters, and water lines (especially if they are used for grounding). Natural objects which perturb electric fields are trees, shrubs, and tall grass. Any grounded object will distort electrical fields. Magnetic fields are perturbed by magnetic materials and non-magnetic current conductors.

The simplest measurements would consist of a traverse around the periphery of the property and around major structures on the property. Measurements should be taken at least every ten (10) feet.

A better method to employ would be to map the fields over the property. The grid for mapping should be at least every ten (10) feet, although a five foot grid would be better. There are several items in the instrument loan package which will facilitate this task:

1. The wheel enhancement will allow automatic collection at 0.5, 1, 4 meter intervals. This change in units should be taken into account in laying out mapping grids.

2. A tape measure is provided to lay out appropriate turning points on the property.

3. Surveyor’s flags are included to establish and maintain turning points.

The field should be measured at every corner and at the mid-point of walls of structures on the property. The location of the points where measurements are make should be noted on the sketch.

11.4.2.2 Indoor measurements

Living areas—Make an accurate sketch of the residence. Show on the sketch where any measurements were made and list the object that was measured.

As a minimum the field should be measured in the center of every major room in the house, except the bedrooms. In the bed rooms, the measurement should be made 8 inches above the center of each bed in the room. These reading should be made 3 feet above the floor with the three-axis meter.

Current sources such as lights, ceiling fans, range, or ovens should be left in their “as found” condition during the measurements. If the resident requests, comparison measurements can be made between operating and non-operating states. Be sure to not on record any devices that are energized.

Appliances—The magnetic field of appliances should be measured if time allows, if the resident requires them, and they can be turned on conveniently. When measuring the fields some general guidelines should be followed.

1. Use the single axis meter
2. Move and rotate the probe until a maximum reading is obtained. Note where the reading occurred relative to appliances and prove directions.
3. The first reading should be made 3 inches from the object.
4. The second and third readings should be made at 12 and 24 inches away from the object.
5. The readings should be recorded on the data sheet.
6. Nearby appliances can influence readings. Be sure to take this into consideration.

11.4.3 Other Major Locations

The other major location addressed here are schools. Measurements taken at schools are similar to those taken in residential areas, but there are differences.

11.4.3.1 Outdoor Measurements

The outdoor measurements will require a sketch of the building and the surrounding property. Locations of power lines, transformers, services drops, water lines, or any other sources where readings are likely to be high should be included on the sketch. Specifically all distribution lines within 50 feet of property and all transmission lines and substations within 500 feet are to be included. Also note areas where children are more likely to spend time, such as playgrounds.

There are two ways to collect data on fields about the property. One way is to go along the perimeter of the property taking readings every ten feet. Then take readings every ten feet at the perimeter of the building. If there is more than one building on the property, take readings around each building. The second and preferred way to obtain readings is by mapping the field. A ten foot grid is an adequate size to obtain readings. A three-axis meter should be used and measurements should be made 1 meter above ground.

11.4.3.2 Indoor Measurements

To take indoor measurements one will need to sketch a floor plan of the building. Each point of measurement should be marked on the drawing. Measurements in the classrooms of the building will be taken around the perimeter of the room and at its center. A reading should be taken at each corner and at the midpoint of each wall. The instrument should be held 3 feet from the floor and close to the wall. The center of the room should be estimated and a reading taken 3 feet from the floor. Measurements should also be taken along the hallways at least every 10 feet on the center line.

11.5 SUPPLEMENTAL PROCEDURES

Although the primary places of measurement will be in houses and non residential areas such as schools, one may also be asked to take measurements of power lines. A slightly different procedure should be followed when taking measurements of power lines. The basis for the following procedures is the ANSI/IEEE Standard 644-1987 amended to take advantage of the features of equipment in the loan program.

11.5.1 Electric Field Strength Measurements

Electric Field Strength measurements should be made with the instrument 3 feet above ground and 8 feet away from the operator. Rather than trying to hold the meter 8 feet away, one may use the antenna on the wheel when using EMDEX-C. The meter should be set up to read the vertical component of the E-field. One should avoid perturbing the field or taking data near perturbing objects. When making sketches of the line geometry one should include the conductor size, spacing and configuration, and the height of the conductors above ground. Also the line voltage and current levels should be measured or estimated.

11.5.2 Lateral Profiles

The Lateral profiles should begin under the center conductor and move perpendicular to the line at least 100 feet beyond the outside conductor. For profiles of EHV lines the distance should be farther. When doing full profiles one should start beyond the conductor at the point of interest and move perpendicular to the line to the other side. During each measurement pass the operator should obtain readings at least 5 points along the path. The maximum reading should occur underneath the line at the point where it sags closest to the ground. Also include the conductor heights if possible.

11.5.3 Longitudinal Profiles

To do the Longitudinal profiles one should determine the point on the lateral profile where the gradient is largest. Then, if possible, move parallel to the line from structure to structure. This profile should also contain at least 5 points of measurement.

11.5.4 Precautions

When taking Electric Field measurement there are some precautions to follow. Measure on terrain that is as even and flat as possible. Avoid perturbing objects such as other power lines, trees, towers, fences, and tall grass. The meter should be oriented perpendicular to the transmission line. Also keep the instrument handle, if used, free of conductive contamination, such as grease, water, dirt, etc.

11.6 MAGNETIC FIELD MEASUREMENT PROCEDURES

To make Magnetic Field measurements of power lines, the meter should be oriented to obtain maximum reading or one should use a three-axis meter. The distance between the operator and the meter is not important for magnetic field measurements. A magnetic field will be perturbed by magnetic material or non magnetic conductors. These objects should be avoided if possible. If there is a perturbing object, the measurement should be made at least three times the largest dimension of the object to the point of measurement. For example, if there is a 10 foot tree tall in the path of measurement then a new path should be chosen at least 30 feet away from the tree. The sketches made for magnetic fields should include the same information as electric fields; conductor size, spacing and configuration, height of the conductor above ground, and estimated voltage and current levels.

11.6.1 Lateral and Longitudinal Profiles

The lateral and longitudinal profile procedures are the same for magnetic fields as electric fields.

11.6.2 Precautions

When taking magnetic field measurements, one precaution should be considered. The magnitude of harmonic components in any induced field or induced voltage are enhanced by harmonic number. Therefore, if possible, the waveform of the field should be observed to obtain an estimate of the amount of harmonic content. If harmonic levels above 10% total harmonic distortion are present, the content should be determined by waveform analyzer if the circumstance warrant.

11.7 INTRODUCTION TO THE TVPPA EMF LOAN MEASUREMENT PROGRAM

TVPPA provides an instrumentation package for short term loan to those members who wish to provide measuring services to their customers. The package is intended to serve two purposes; first, to save those members who will have limited need for such instruments the expense of acquiring them and, second, to give immediate access to instruments for those members who will eventually acquire their own.

The package is completely equipped for measurements of electric and magnetic fields of a general nature. It contains all the equipment necessary to carry out a basic measurement program. A listing of the inventory of the package is in this section.

We have also developed a general set of guidelines for conducting those measurements members are most likely to undertake. They are identified as the TVPPA EMF Measurement Protocols. Included in the Protocols are EMF Data Collection Sheets. They may be copied or serve as a guide in the preparation of your own forms.

Should you wish to use the instrument package, contact either Marilyn Sartin or Jack Fish in the TVPPA office as far in advance of the need as possible. If you are unfamiliar with the instruments in the package, request an advance copy of the video tape and EMDEX-C Users Guide.

EMF MEASUREMENT LOAN PACKAGE
SHIPPING LIST

Instruments:

EMDEX-C	Three axis meter for measuring electric and magnetic fields
EFM 131	Single axis meter
SupraRule	Ultrasonic conductor height meter

Software:

Basic programs and macro functions for initializing the EMDEX meter, collecting retrieving, and displaying measurements of field vs. time.

Enhancement programs (PathPlot) for collecting and displaying measurements of data vs. distance as well as contour plots.

Hardware:

Distance measuring wheel with antenna

Video tapes:

TVPPA basic instructions
EFM complete instructions

Documentation:

EMDEX-C Users Guide
PathPlot Users Guide

Accessories:

Measuring tape
Surveyor’s pins
Spare batteries

SECTION 12

ANNOTATED BIBLIOGRAPHY

12.1 ELECTRIC AND MAGNETIC FIELDS

Bonneville Power Administration, *Electric Power Lines; Questions and Answers on Research into Health Effects*, Bonneville Power Administration, Portland, OR, 1988.

An 11-page “backgrounder” on the EMF issue, attractively presented, and presenting a carefully balanced tone.

Electric Power Research Institute, *Electric and Magnetic Fields Fundamentals: An EMF Health Effects Resource Paper*, Electric Power Research Institute, Palo Alto, CA, 1989.

This document provides an overview of the basic physical characteristic of electric and magnetic fields, including a glossary of related terms and illustrations that can be made into overhead transparencies or 35mm slides.

Lee. Jack M. et al, *Electrical and Biological Effects of Transmission Lines: A Review*, Bonneville Power Administration, Portland, OR, 1986.

Although not containing a number of recent studies, this is an excellent overview of the field until 1986, including interesting material on EMF effects upon livestock and wildlife.

Morgan, Granger M., *Electric and Magnetic Fields from 60 Hertz Electric Power: What Do We Know About Possible Health Risks?*, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA, 1989.

This 45-page pamphlet was carefully crafted, using focus groups, to provide an objective description of the basic facts about EMF. It is also illustrated in an attractive manner. This document can be used as a handout to the public that will have more credibility than something prepared by the utility industry.

Transmission/Distribution HEALTH & SAFETY REPORT, Robert S. Banks Associates, 825 Washington Avenue, Ste. 104, Minneapolis, MN, 55414.

This is a monthly summary of research and events related to the EMF field. It's ideal for people who need to keep current on the issue.

12.2 RISK COMMUNICATION

Applied Decision Analysis, Inc., *A Handbook for Communicating Potential EMF Risks*, Electric Power Research Institute, Palo Alto, CA, EN-7046, 1990.

This handbook provide step-by-step guidance on how to prepare EMF risk communication materials.

Arkin, Elaine Bratic, Translation of Risk Information for the Public: Message Development, in Covello, et al, 1989.

Provides a brief overview of risk perception and message development.

Bridgen, Pamela J., *Principles & Guidelines of Effective Risk Communication*, Edison Electric Institute, Washington D.C., 1989.

A short (35-page) overview of risk communication, not limited to EMF.

Chess, Caron; Billie Jo Hance, and Peter M. Sandman, *Improving Dialogue with Communities: A Risk Communication Manual for Government,* New Jersey Department of Environmental Protection, Trenton, NJ, 1988.

An excellent guide applying risk communication principles to governmental situations. These materials apply to utilities as well.

Clement International Corporation, *Risk Communication Manual*, Electric Power Research Institute, Palo Alto, CA, 1991.

This manual was prepared after analysis of seven cases related to the utility industry. It provides an overview of risk perception, and then a number of "Do's and Don'ts" targeted at specific audiences.

Committee on Risk Perception and Communication, National Research Council, Improving Risk Communication, Washington D.C.: National Academy Press, 1989.

This report summarizes the findings of a National Research Council study on risk communication. In addition to a good overview of the field, it also contains an appendix by Baruch Fischhoff, titled "Risk: A Guide to Controversy," that identifies a number of crucial issues in risk communication.

Covello, Vincent, and Frederick W. Allen, *Seven Cardinal Rules of Risk Communication*, U.S. Environmental Protection Agency, Washington D.C., 1988.

This brief pamphlet has been distributed by the hundreds of thousands, and summarizes much of the risk communication field in seven basic principles.

Covello, Vincent T., David B. McCallum, and Maria T. Pavola, Effective Risk Communication: The Role and Responsibility of Government and Nongovernment Organizations, New York: Plenum Press, 1989.

This book contains twenty-one articles on risk communication that were presented at a workshop on the role of government in health risk communication and public education. It also contains four appendixes with practical advice on risk communication by Chess, Hance, Covello, and others.

Covello, Vincent T., David B. McCallum, and Maria T. Pavola, Principles and Guidelines for Improving Risk Communication, in Covello, et al, 1989.

This is the opening chapter of the Covello book, and summarizes basic principles of risk communication philosophy, planning and evaluation, message sources, message design, delivery channels, and target audiences.

Fischhoff, Baruch, Risk: A Guide to Controversy, in Committee on Risk Perception and Communication, National Research Council, 1989.

This appendix identifies a number of crucial issues in trying to make risk communication an applied science.

Sandman, Peter M., *Explaining Environmental Risk*, U.S. Environmental Protection Agency, Office of Toxic Substances, Washington DC, 20460, 1986.

An outstanding 26-page pamphlet explaining how the media address stories on risk, and then presenting a summary of risk perception research.

Sandman, Peter M. Hazard versus Outrage in the Public Perception of Risk, in Covello, et al, 1989.

This articles lays out the concept that when there are a number of factors that the public sees as high risk, the public views the risk not as a hazard, but as an outrage.

Slovic, Paul, Informing and Educating the Public About Risk, *Risk Analysi*s, Vol. 6, No. 4, 1986.

The author summarizes the guidance that risk communication research can give for informing and educating the public about risk.

12.3 PUBLIC PARTICIPATION/COMMUNICATING WITH THE PUBLIC

Chess, Caron; Billie Jo Hance, and Peter M. Sandman, *Improving Dialogue with Communities: A Risk Communication Manual for Government,* New Jersey Department of Environmental Protection, Trenton, NJ, 1988.

A practical guide describing how communities see risk, how to earn trust and credibility, deciding when to release information, the need for public participation, and guidelines for explaining risk.

Creighton, James L.; The Public Involvement Manual, Cambridge, MA: Abt Books, 1981.

This is the first of several public involvement manuals by this author. This first manual is based on a guide developed for the U.S. Bureau of Reclamation, and is the only one of the guides in book form.

Creighton, James L, *Public Participation Manual*, Edison Electric Institute, Washington D.C., 1984.

This guide presents a complete overview of public participation, including in-depth information on many public participation techniques, using examples from the utility industry.

Creighton, James L. *BPA Public Involvement Guide*, Bonneville Power Administration, U.S. Department of Energy, Portland, OR, 1985.

This is the most recent of this author's guides, again providing a detailed description of how to conduct public participation programs.

Creighton, James L., Jerome Delli Priscoli, and C. Mark Dunning (Editors); *Public Involvement Techniques: A Reader of Ten Years Experience at the Institute for Water Resources*., U.S. Army Corps of Engineers Institute for Water Resources, Fort Belvoir, VA, 22060, 1983.

This reader contains numerous articles on the experiences of the US Army Corps of Engineers implementing public participation programs. After a number of papers on the need for public involvement, and general principles, more than half the document focuses on specific public involvement techniques.

Kasperson, R.E., Six propositions on public participation and their relevance for risk communication, *Risk Analysis*, 1986, 6(3): 275-81.

This article reviews the research and experience with citizen participation programs, and draws upon this experience to identify how risk communication efforts can be effectively structured and implemented.