

A PRACTICAL APPROACH TO COMMUNICATING TRANSPORTATION RISK

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ABSTRACT

Some people ask: How can the risk of transporting radioactive materials be accurately communicated? Many other people, frankly, do not care what or how the risk of transporting radioactive materials is communicated. So, why bother? Because often the same people who say they don't care sincerely believe transporting radioactive materials is an extremely dangerous activity in our society. Conversely, other people believe, just as sincerely, that transporting radioactive materials can and has been done very safely and to great benefit to our society over the past 40 years...so why question such a safe record?

Some peoples' perception is at great odds with others when it comes to the process of communicating transportation risk. In addition, there is a credibility gap. When Federal government officials go out of their familiar surroundings, they are often not welcomed as experts who know what's best for the local community.

This paper will address some practical ways of communicating transportation risk. Risk communication really means raising the level of understanding about all relevant issues among all concerned parties. Learning how to listen effectively to all sides of the issues is critical. Knowledge of not only the technical merits and realities but also the public concerns and perceptions is needed to complete the equation of successful communication of transportation risk. If all aspects are not addressed, a major question will always remain as to which experts to trust: Federal transportation managers or their critics.

STOP, LOOK, AND LISTEN!

Yes, I know, you think you learned this before you ever began kindergarten. But I wonder how many of us ever slow down (let alone stop) in this fast-paced world to really look at the person or persons we're talking to and effectively listen to what THEY have to say.

In most situations, we are busy trying to think of what WE'RE going to say next. We can hardly wait for the speaker to pause.....to take a breath.....so we can jump right in there with our viewpoint. Often our "gems" have actually little to do with what the speaker is saying. But, that doesn't stop most of us. Our minds continue to race ahead of the speaker so we'll be ready to "respond" at the next breathing point.

It's a wonder true communication ever takes place today. Einstein once said his formula for success is:

$X + Y + Z = A$, with A being "success," X equals "work", Y equals "play" and Z equals "keeping your mouth shut."

The point I am trying to make (for those of you who haven't raced ahead of my words) is listening is not a passive state. Real communication only takes place when there is (1) a sender, such as a speaker like me; (2) a message, such as a talk like this; and (3) a receiver such as an illustrious group like you.

I suspect many of you have already tuned me out and are thinking of (A) the next speaker, (B) what and with whom you're going to have lunch, or (C) your own talk at

this conference. It's very easy for the mind to race ahead of a speaker; it's not so easy to be an effective listener.

What has this got to do with communicating transportation risk, you ask. Well, I'm glad I paused long enough for you to ask that question. The answer begins with the fact that many involved in transportation risk management also take on or are asked to handle the job of communicating transportation risk to those within and outside their own organizations. I'm talking about traffic managers, package designers, technology development engineers, health physicists and regulators. Yes, many risk managers talk to themselves, but that's the topic of another paper. Seriously, most transportation managers prefer to communicate within their own organizations, which are composed of people much like themselves, with similar technical educational backgrounds and shared values. Here, real communication often occurs.

Why? Because real communication often takes place within a nonthreatening atmosphere. Nonthreatening often means you are among people you know and with whom you feel comfortable and relaxed. Yet, here, too, listening is not a passive activity. In their own surroundings, transportation managers usually "listen" beyond the spoken words for feelings and they observe body language; since how another person feels about the topic is often more important than the spoken words. How can you tell if you're really communicating? Ask nonjudgmental questions or rephrase what the other person is saying in your own terms. This

provides a check to see if you have understood their point of view.

VENTURING ONE WAY DOWN A TWO-WAY STREET

Somehow none of the above seems to take place when the transportation managers step outside their familiar office buildings to address the Rotary Club, the League of Women Voters, or worse than that--the MEDIA. Einstein's equation for success no longer seems to apply. Keeping one's mouth shut and listening to others' viewpoints seems very difficult outside the confines of one's own workplace. The situation now becomes adversarial and uncomfortable. The manager is not among friends/colleagues--unless somewhere along the line, the person has had the foresight to become comfortable in this role as a useful media source of technical information. Now, that could be quite helpful--to all sides.

As the National Academy of Sciences (NAS), National Research Council's recent report on "Improving Risk Communication," says:

"Risk communication should be a two-way street. Organizations that communicate about risks should ensure effective dialogue [that includes listening as well as talking] with potentially affected outsiders."(1)

The report continues, "This two-way process should exhibit (1) a spirit of open exchange in a common undertaking rather than a series of 'canned' briefings restricted to technical 'nonemotional' issues and (2) early and sustained interchange that includes the media and other message intermediaries."

The Academy seemed to hit the nail on the proverbial head, it seems to me. For most of the risk communication efforts of the past employed by the Federal government, including transportation officials, are limited to the "dog and pony" and "canned briefing" format. Transportation managers feel they are getting their risk message across if they extricate themselves from their familiar surroundings and face the public with one or a series of one-way presentations. Folks, I am here to tell you what a nationally recognized set of experts took years of study to definitively find: **ONE-WAY MESSAGES DO NOT EQUAL RISK COMMUNICATION.**

Risk managers and analysts have a difficult job technically, so why make it more difficult and ask them to do something they really weren't trained to do--talk with the public? Why not leave that chore to the public information professionals? The answer comes from basic common sense. In our democratic society, some of our citizens expect to participate in debates about controversial issues. Transporting radioactive and hazardous material certainly qualifies. And the Department of Energy, as a major shipper of these controversial materials in our country, unquestionably

occupies the role of a risk manager that should also be in the role of a risk communicator.

Following the release of the NAS report in September (1989), Secretary of Energy, James D. Watkins, sent a memorandum to his highest level office directors in which he called attention to the report and stated, "I plan to make improved risk communication a matter of DOE policy so that we are better informed in our decisions and better communicate the bases of our decisions with the media and the public." The Secretary then asked to be *informed* "if there are changes in Departmental policy or operating practice" that his high-level managers would recommend (2). This is recognition at the top level in the Federal government of the need to reassess how the Department exchanges information on the complex technical issues facing DOE every day. But, how to do it? First, begin with risk communication training for those involved in evaluating risk situations, such as transportation managers. Add to that list anyone with working technical knowledge who could help explain what transporting radioactive materials is all about.

TECHNICAL ANALYSES CONTAIN VALUES, TOO

Contrary to what many risk managers or risk analysts will tell you, technological choices are not purely based on scientific or mathematical information. They involve societal values, too. Many choices are based on valid technical data from sophisticated data bases. Today, however, people no longer agree about which societal hazards are the ones most worth avoiding and which societal benefits are the ones most worth seeking. There will always be cost-benefit analyses to be made in this modern technological age. Risk managers and other technical people will contribute to these analyses; but, in the end, the choices will be made in our political system. This means values to society come into play all the time.

"There are no participants in debates on technological issues on whom nonexpert and public officials can rely unquestioningly for unbiased information." (1) Risk managers find it difficult to admit to being biased. Yet no one is really unbiased; everyone has some incentives based on their backgrounds and current work objectives as well as a host of other influences. So, who do we believe?

Here's where effective risk communication comes in. Most of us in the business of solving technological problems see the value of getting technical information to nonexperts--the one-way messages, I mentioned. However, it is also important for the technical experts and risk managers to learn more about the nonexperts' concerns. Effective listening and communication training will help.(3) This is the two-way street the NAS report refers to in its definition of risk communication.

Two-way communication is not new. It is an essential element of all Communications 101 classes. Practicing two-

way communication, however, is deceptively difficult. The Academy clarified the meaning of risk communication in its report by refining and sharpening its definition in relation to risk communication:

"Risk communication is an interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management."(1)

So risk communication involves more than risk messages. It is this interactive process that includes "all messages and interactions that bear on risk decisions."¹ Hence, risk communication is something not to be left strictly to the public relations, public information, or institutional professionals--it also involves risk managers and anyone else involved in risk decisions. For risk communication to succeed, its process must be understood in the context of any decision making efforts involving hazards and risks, i.e., it must be understood in the context of risk management. For risk communication to succeed, it must be understood and practiced by the risk manager.

WHY ADDRESS THE "LITTLE CHERNOBYLS"

Transportation risk managers usually know a lot about the quantitative risks related to their particular work, be it packaging or operations. What they usually do not know about or understand as important is how others feel about their work. For example, some comments on the transportation risks from the recent Supplemental Environmental Impact Statement (SEIS) for DOE's Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico (4) are revealing. One commenter wrote, "DOE gives us simplistic assurance" that an accident won't happen. (4) Another said, "I know that DOE has a standard policy that there will never be an accident." (4) Now, to clarify, I did not say, "DOE said those things." But that is the perception of some of the commenters.

Let's face it, "simplistic" reassurances about minimal risks aren't cutting it in the outside world. The interested public has expressed concerns and feelings about transportation that won't disappear because a Federal government policymaker or technical transportation program manager says there is little to worry about. "We're from the government and we're here to help you" is a trite phrase; but just as trite is an attitude of all talk and no listening.

What is the public saying about WIPP transportation? Several commenters on the WIPP SEIS believe there will be many "little Chernobyls" on the highway. All it would take, they believe, is for an accident to happen and the result would be a "nuclear explosion" like the one they read about at Chernobyl. They remember TMI, the Challenger, and the

Valdez oil spill; and they relate these events with hazards that weren't predicted and "couldn't possibly happen" but did. "Trucks are not driven by statistics--they are driven by humans who get tired and who make mistakes," one commenter wrote. (4) "DOE seems to assume the casks are going to be totally reliable and that any release will be negligible. I think that's an over reliance on technology..." wrote another. (4) So citing statistics and stating the reliability and integrity of shipping casks is not alone going to solve the public's fear and concern about transportation risks. Yet, from a risk assessment standpoint, that is the basic defense.

An analysis of institutional issues from some recent spent fuel shipping campaigns indicated "that effective interaction with State and local officials is critical to the success" of these types of shipments.(5) The results of this study "strongly suggest that public information and planning activities should be integrated [emphasis added] into the overall shipping program and that shipping participants should be encouraged to recognize the interrelationships between public information and technical issues." (5)

The key findings of this study relate to the integration of the technical program requirements and the institutional issues. This is a total risk management program. It includes addressing local concerns such as (1) a detailed knowledge of the route and (2) a willingness to discuss this and other issues with State and local officials along the transportation corridor, the study concluded. It also recommended "effectively communicating information on transportation risks to the concerned public and responding sensitively to community concerns about safety."(5) A "genuine effort" to cooperate and "sincere concern" about local, state and public interests should be demonstrated if there is to be any hope of achieving a successful shipping campaign, especially when the elements are controversial.

WHAT IF IT AIN'T BROKE

But what about the 40-plus years of safe radioactive materials shipments by DOE? Surely someone beyond the DOE corridors must acknowledge an excellent safety record such as this. Of the approximately 5 billion shipments of all commodities in the U.S. each year, only a fraction contain hazardous and radioactive material.

Of the total radioactive material shipments (approximately 2 million) each year, only about 15,000 are shipped by DOE. And, although DOE ships a small percentage of total radioactive materials shipments, the curie content is higher than the average for other shippers.⁶ The fact remains, however, that there is an outstanding shipment safety record--for DOE and the entire transportation community.

In fact, in all those years of shipping radioactive materials, there has never been an injury or death related to

the nature of the materials. In addition, no release of material has ever occurred from a package like those used to ship spent fuel and high-level radioactive waste, the most controversial of all radioactive material shipments.

Therefore, the packaging, which the transportation professionals say is the primary mean of protection, must be pretty good. And the handling and shipping procedures must be under strict control to obtain this enviable safety record. They must be doing something right, so why all the concern?

No one can argue with the statistical safety record. Yet accidents can and do happen. People outside of DOE and the transportation community see trucks rolling along the interstates every day. If they live in a city, these people see rail tracks converging from all points. If they live in a more rural setting, they see railroad crossings. It seems more people identify with transportation than with any other aspect of radioactive materials handling and use. People see truck accidents on the interstate; they read about train derailments. These mishaps don't need to be related to radioactive shipments. But, these same people remember seeing pictures of the oily beaches of Alaska, the Challenger explosion, and the evacuations of Chernobyl (a continent away) and Harrisburg, over 10 years ago, but much closer to home. Don't simply tell these people there is a very small (negligible) risk from a transportation accident from the shipments to WIPP or the proposed high-level waste repository. Yes, some have heard that DOE and others have a great radioactive materials transportation safety record. Many remain unconvinced of the so-called "negligible risk." So, listen to their concerns.

LEARN TO LISTEN EFFECTIVELY

Listen: "The waste will go by Gallup. We live very near Gallup. There are many drunk drivers in Gallup, There could be an accident like in the past."(4)

Listen: "I'm reminded every time we hear of a train derailling carrying toxic materials..." of the possibility of an accident." (4)

Listen: "It seems that accidents always do happen and we're constantly reassured accidents won't happen, but surprisingly they do."(4)

If one listens to the concerns and asks nonjudgmental questions to find out what the person is really saying, sometimes semantic difficulties will surface. Words are symbols for ideas; they do not always mean the same thing to all people. If a word triggers a different mental image than the speaker had in mind, misunderstanding is sure to follow. Try rephrasing what you hear in your own words and feedback your understanding to the speaker. This enables you to check out your own understanding. It also allows the speaker to evaluate his/her message from a different point of view and see how the message is being received. For

example, the word "risk" means many different things to as many different people. To the transportation professionals, talking about "negligible risk" should be reassuring (only 10^{-6} calculated risk of a spent nuclear fuel transportation accident with any release of material). But, to others who do not assess risk for a living, scientific notation is not a regular part of their vocabulary. Therefore, you will probably lose their interest or perhaps confuse the listeners. Try saying: that would have about one chance in a million of occurring.

Defining your terms up front and giving a clear, less scientific, yet still accurate example of the risk is a good beginning. Rephrasing of your audience's questions provides reflective feedback, which not only clarifies understanding but also defuses emotional reactions that often block communication. It also allows you a chance to expand on your points, AFTER the other person is through talking.

YES, IT CAN BE DONE

Conflicts and tensions abound when communicating about transportation risk--especially when communicating about the risks related to radioactive materials transportation. These conflicts and tensions arise from the diverse interests involved and interfere with solutions to both the technical and institutional issues. Yet there are some points of light beginning to peek through the dark tunnel of mistrust and misinformation.

At the DOE, they are beginning to buy the idea that communication is a two-way street (it's part of the Five-Year Plan):(7)

"DOE will evolve from a production-oriented culture toward a culture of open communication, clearly understood and demonstrated priorities for environmental stewardship, and accountable management."(7)

"During the 1970s and 1980s the public became increasingly frustrated with DOE's emphasis on technical facts and assumptions as opposed to discussing and understanding public concerns."(7)

"The Nation has entered into a new era--one where the public wants and demands not only more environmental protection but also more understandable information and involvement with plans and progress...."(7)

DOE has admitted "the job has just begun,"(7) and that DOE has a goal to show a change in "culture" and demonstrate a "commitment to open and candid public communication."(7)

"This commitment includes listening to DOE's critics as well as its supporters. It will be a difficult and lengthy

process to implement fully such a culture change. DOE will move toward this goal aggressively."(7)

Some transportation examples that indicate actions as well as words follow:

The first example is the DOE/ Western Governors' Association (WGA) interactions. These interactions began this past year between representatives of the Western states along the corridor to WIPP and high-level DOE officials representing the management of the WIPP transportation program. A number of interactive meetings have been held so far and both sides have expressed positive feelings about the progress made. Twelve issues of concern have been identified by WGA. DOE drafted a Statement of Work to address each of these areas and it was reviewed and jointly revised at a recent meeting. Steps like this show the interest and commitment DOE has to opening up and listening to affected parties. It has also demonstrated a sincere desire on the part of the WGA and the governors it represents to solve some thorny issues concerning transportation of radioactive transuranic waste through their states.

A second example is a Cooperative Agreement with the Energy Task Force Management Corporation, which provides a forum for DOE transportation officials to meet and work with officials of urban areas around the country. Several meetings (about 3 per year) have been held and funding is earmarked for DOE to continue this interactive arrangement. The meetings have focussed on several transportation topics, the most notable being emergency response planning. DOE sets an agenda and makes some presentations on the subject matter of interest to the urban officials. However, the most successful aspect of the meetings is the opportunity for DOE to listen to others' concerns, receive suggestions on potential solutions, and respond in a cooperative, nonthreatening environment.

Successful transportation risk communication begins with a willingness to listen effectively to others' concerns and by providing the opportunities to get the interested parties together in a cooperative and supportive atmosphere for frank and open discussions of practical solutions. These attitudes and opportunities seem to now be permeating the "new DOE culture" as Secretary Watkins calls it. It has come none too soon, for credibility, the cornerstone of successful risk communication, was low.

Other opportunities for effective interaction on transportation issues are on the horizon, including a DOE-sponsored Transportation Roundtable of invited experts within and outside DOE to listen and discuss the future trends of DOE transportation in the key areas of concern to the participants. This Transportation Roundtable will

take place in Washington, D.C. in late March. It is but one in a series of such opportunities for effective listening for DOE.

It's refreshing to see DOE is carrying out some good basic practical measures toward improved communication of transportation risk:

1. STOP--Be willing to listen and practice the pause; ask for risk communication training if you haven't had any.
2. LOOK--Be aware of who you are trying to communicate with and ensure the environment is nonthreatening to all participants.
3. LISTEN--When giving technical information to those outside your familiar surroundings, listen to your audience for reflective feedback to ensure communication really takes place.

Finally, watch out ahead for opportunities to create and participate in interactive communication on transportation risk. The more you practice these seemingly simple steps, the more you'll like communicating about transportation risk.

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