

## CREATING CONSENSUS ON RADIATION AND RADIOACTIVE WASTE ISSUES

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### ABSTRACT

Consensus building on issues such as radioactive waste disposal, toxic waste disposal, or the location of a new prison, a new airport or a new oil refinery is difficult, but NOT impossible. Frustration, skepticism, a lack of confidence in business, a lack of trust in government, and resistance to change are becoming the rallying points of the 1990's.

Consensus building requires education, patience and time. It requires changes in attitudes and relationships. The change may take from three to seven years. Prior planning and a forthright, honest approach to an issue will yield satisfactory results. However, the time to reach an agreement, achieve a consensus and the additional expenses may be extremely frustrating.

We can actively follow the steps of consensus building to create a whole that is greater than the sum of its parts, a WIN-WIN situation. The alternative is a potentially disastrous result, lengthy and costly legal confrontations and a no-win situation.

### INTRODUCTION: THE NEED FOR CONSENSUS

Developing consensus or general agreement is usually a nebulous term that is given little attention, particularly when one group wants to get their point across. Yet, consensus building is essential to the success of any project. Consensus building involves valuing, instead of discounting, differences.

So many people and interest groups with so many different opinions can produce incredible stress and frustration. On the other hand, we can look at differences as opportunities to expand our thinking and create even better solutions.

In the past, people merely accepted what government or big business dictated. "Trust me," or "don't worry, we're looking after your best interests" were common phrases. People, either from apathy or concern for their own survival, followed the corporate leadership. In some instances honesty, integrity and the concept of "an honest days work for a days pay" was replaced by greed, the fast "buck" and environmental degradation. For many, growth and an opportunity for upward mobility became a reality. There was job security and food on the table. But at what price to future generations and the environment?

Today, a large segment of the population in developed nations has reached a comfortable standard of living. Now there is time to address other, perhaps more fundamental issues. Individually, or collectively, people are now asking themselves what is the price of progress, what are the envi-

ronmental consequences of technology, and what legacies are we leaving to future generations.

People are changing, growing intellectually and so is technology. The recent shifts in political ideology in Russia and other communist countries, the growing concern about global warming, the emphasis on proper disposal of wastes, and the desire for better and faster communications are a few examples of societal change and growth. There is legitimate concern for the rights of the people and there is a new respect for the environment. Rather than act first and let future generations handle the consequences, many believe that now is the time to give serious consideration to any plans that may create real or perceived negative impacts on people or their environment. Therefore, if projects are going to succeed, they will be formulated and nurtured by consensus.

The decade of the 1990s may well focus on environmentalism, consumer rights, individualism, freedom from oppression and a genuine concern for people. Consequently, it is imperative that corporations, politicians and groups with a specific interest understand that tactics which may have worked or been acceptable in the past may be looked upon with disfavor and ridicule in today's "people oriented" climate. A few examples may serve to illustrate the general scenario:

"So even before the plant has been commissioned we have evidence of cost cutting and attempts to make things easier for the company at the expense of public health and safety... The Swan Lake Action Group (SWAG) is only motivated by health and environmental concerns, and not profits..." "There has been too

much of damn the environmental consequences..." said Mr. Pearce, "We have to have development and industry in our kind of society - there has to be a balance between our lifestyle - based on cash flow - and what is environmentally acceptable."(1)

Whereas these quotes, and the others that appear in this article, relate to issues confronting the mineral sands industry in Western Australia, they have generic application. One could encounter the same concerns and statements for proposed projects in other parts of the world.

### THE FOUNDATION: BUILDING A CONSENSUS

Consensus building is a complex and comprehensive communication activity. Consensus requires personal responsibility. It starts with the individual and reaches out to another individual, then to a small group, then to a large group. It involves establishing rapport, credibility, and trust on a personal and professional level. For our purposes, we will define communication as "the sharing of meaning" As simple as this sounds, we often try to say the facts to another person and expect that they will perceive them the way we do. Lets look at why this DOES NOT work so that we can build a model that is effective, and a program that DOES work.

Each person is a unique being who sees the world through his own unique perspective. His perspective is made up of many things. It includes his behavioral style, his values, the impact of all of his experiences, his culture, race, family history, and gender. These variables work together to form a belief system, or paradigm, through which that individual sees the events of the world. He develops a perception of what he believes and what is correct. Because man has a mind, feelings, and the ability to reason, no two people will ever see the world or any part of it in exactly the same way. This is a major challenge to consensus building.

To illustrate perception, look at, then carefully study the picture in Fig. 1.(2) What do you see?



Fig. 1. Perception.

Many people see a young woman with a fashionable hat. Some people looking at the same picture see an old hag. Try to convince someone who sees her differently to side with your point of view. Good luck! Because we have a mind and the ability to reason we do not see the picture, or for that matter the world, as it really is. We see it as we are, or, through our own paradigm. In this illustration, both ways of seeing the picture are correct. That is to say, neither are wrong. However, in order to see the other point of view our whole perspective or paradigm needs to change.

The first step in consensus building is becoming aware of our own paradigms. This process involves introspection. We need to understand our personal or organizational behavior, values and mission. The more we clarify who we are as an individual or as an organization the more we can understand and appreciate the paradigms of another. Politicians thrive on negotiating and maneuvering toward a common, politically motivated, objective. Business leaders are perceived as goal oriented, task and profit motivated. Environmentalists have a cause. Hermits just want to be left alone. Thus, for any situation we should look at our purpose, our motives, and our message.

Research has shown that the message we seek to convey is actually perceived based on several subjective areas including; 55% appearance, 38% tone of voice and, 7% words. It is important that our appearance and tone of voice, as well as our words, are in alignment with our values and mission. The same research has shown that in the first two to four minutes, according to what we project through our appearance, tone of voice and words, we either build or lose credibility, rapport, and trust.(3) Obviously, consensus building can be boosted tremendously by our appearance and first impressions.

The second step toward consensus building is found in the following statement: "First seek to understand, then seek to be understood." It is necessary to acknowledge that the viewpoint of another person has credibility in their paradigm. The key is to truly understand, not just try or pretend to understand, their paradigm by applying the skills of empathetic listening. This involves rephrasing the content and the feeling of the communication. Consider the following statements which were made in response to an announcement that a rare earth minerals processing facility planned to establish a low-level radioactive waste repository in the district.

"The material stays active for billions of years... If the Government allows the proposal to proceed, no guarantee can be given that an accident won't happen... For this reason alone, we hope those who were elected to office will do the right thing -- what is best for the people -- and reject the proposal... What price do you put on the life of your children or grandchildren?"(4) Do you get the feelings of fear and concern that are

being expressed in the statements? It is important in empathic listening to actually "hear" and acknowledge the fear as well as the factual content. You can not simply deal with fear by stating facts. However, by rephrasing both the fear and the content, you let the speaker know that you have shared his message. For instance, a reply to the concern cited above might be, "You are afraid that the environment will not be safe for your children?" The questions let the person know you are actually listening to his concerns (which include his feelings). It also grants him psychological space. It begins to create a common ground. It is an initial step in gaining trust.

When you have used empathic listening to understand another paradigm, and when you believe you actually understand it, from a feeling and a content level, then and only then do you begin to try to be understood. Acknowledge common ground, especially in feelings, and then begin to present facts. Facts from objective sources are best. Facts developed by the opposing side which can be used to strengthen your argument are useful also.

After you believe you have been understood, then you can begin to look for WIN-WIN solutions. This involves being open to new ideas and letting go of your preconceived solution. It involves having respect for the other persons paradigm, valuing the differences between you enough to build on those differences to create a better solution. That is when you know YOU have created consensus.

The steps of consensus building are basic, yet they are difficult to achieve. Before you begin, learn as much about the others as possible. The first impression must be favorable. Then be patient. Sometimes we have to overcome years of "breach of trust." Honestly strive to understand the others point of view, and then to be understood. Finally, be open to a WIN-WIN solution! Consensus building requires listening, feeling and patience.

#### **AN EXAMPLE OF CONSENSUS BUILDING:**

In a democratic society, public feeling and public information have major impacts on the formulation and implementation of policy. A successful policy requires the mutual support from industry, consumers, special interest groups and elected public officials. The consensus must appreciate the need to understand that the solution is in the best interest of all. To develop a "workable" energy policy will require effective communication between those who formulate the policy [the legislator], those who need the policy [the consumer], those who must develop the solutions [scientists and engineers], and those who must implement the solutions [businessmen and industry].

In April, 1989, the State Legislative Leaders Foundation, a non-profit organization and Arizona State University presented a national program on "ENERGY STRATE-

GIES FOR THE 21th CENTURY." Participants included state legislative leaders and key committee chairs from across the nation.(5) The purpose of the seminar was to give legislative leaders an opportunity to examine and discuss many of the critical issues that will shape future energy policy. The participants were actively involved in developing realistic energy strategies. The scenarios had to be available and realistic future energy technologies. Their solutions were required to be both economically and environmentally compatible and acceptable to their constituents.

The legislators were informed about the research which indicates that people retain; 11% of what they hear, 30% of what they see, 50% of what they see and hear, 70% of what they do, and 90% of what they say while doing. The same research also shows that group decisions are made based more on group process than on facts about a situation.(6) The decisions are determined by blending the perceptual differences of each group member. The perceptual differences are created by individual personality style and work role. For instance, an extraverted environmentalist will view the problem differently than an introverted nuclear engineer.

The seminar was designed to give the participants as much opportunity as possible for interaction and participation. The participants were assigned to teams based on their personality style as determined by the Performax Personality Profile System. Each person was assigned a role within the group. The roles were: Governor, legislator, utility CEO, business leader, consumer advocate, and environmentalist.

The challenge was to develop a realistic energy strategy which would be viable into the next century. The strategy must use realistic technologies, but not exhaust supplies of non-renewable resources. The scenario must be compatible with the environment, economically sound, and acceptable to consumers. Finally, the legislators had to create the strategy, satisfy their constituents and get re-elected.

Resource speakers presented the background information. Each group was given general directions at the beginning and process questions at the conclusion of each presentation. The process questions worked as steps in solving the overall challenge. The speakers and process questions were:

Ms. Margaret Sibley, Assistant Director for Energy and Natural Resources, U.S. Department of Interior, described "Non-renewable and Renewable Energy Resources." Process question: List the energy resources you believe should be used in the future.

Dr. Mike Farrell, Director, Carbon Dioxide Information Analysis and Research Program, Oak Ridge National Laboratory discussed "Outdoor Air Pollution: The Green-

house Effect and Acid Rain." Process question: Prioritize your list of resources according to their effect on the environment.

Mr. Matt Barnett, and Ms. Katey Delahunte, nuclear science students at Arizona State University, spoke on "Nuclear Power: Status, Future, and the role of Advanced Reactors." Process question: List the advantages and disadvantages of nuclear power.

Dr. Dean Hoffman, Illinois Low Level Waste Project spoke on "Waste Management: Not in My Backyard." Process question: Develop a plan to "sell" your energy strategies for the 21st century.

The seminar also used nuclear engineering students as facilitators. Each student was assigned to a group. They answered questions, clarified information, served as a page and the computer consultant.

On the second day of the conference the groups were introduced to a PC computer program which processed energy strategy information based on usage, growth, pollution (CO<sub>2</sub> buildup), GNP, and the price of oil. The groups produced the scenario, and the computer algorithm analyzed and processed the information. Whenever an energy resource was exhausted (i.e., oil or natural gas) the computer would sound an alarm then graph the cost of oil, Gross National Product, the buildup of CO<sub>2</sub> in the atmosphere, and changes that occurred in the following energy sources;

Coal	Domestic Oil	Imported Oil	Nuclear
Solar	Conservation	Natural Gas	Biomass
Hydro Unconventional Sources			

The groups presented their strategies to each other at the end of the meeting. They also shared their feelings on the decisions reached by the group and if, in their role [environmentalist, Utility CEO, etc.], they were satisfied with the decision. One group reported that the governor was impeached and the utility CEO was fired before they were finally able to create a workable scenario!

Although some individuals found it tough to accept, every group finally reached the same general consensus -- imported oil must be reduced and nuclear energy should be a major component of the energy strategy.

The positive critique and feedback from the legislators exceeded all expectations. Many felt that the participatory nature of the program, the use of experts as facilitators rather than lecturers, the use of a PC computer model, and the opportunity to interact with students was much more beneficial and valuable than the traditional conference format.

The conference was designed to follow the steps used in the process of developing consensus: Clarify our paradigm, understand another persons paradigm by active lis-

tening, and build WIN-WIN solutions that blend and capitalize on differences. The principals of communication, that the message is carried by 55% appearance, 38% tone, 7% words were applied not only to individual communication, but also to the environment and arrangement of the room. The seminar was held in a comfortable room. Seating was in groups of round tables. Presenters were introduced as resource people, not as authorities to tell the participants what to do or think. The participants were actively involved in problem solving and decision making.

### CONSENSUS BUILDING AND RISK:

Personal risk assessments are generally used to infer the likelihood that and encounter or exposure to a hazard will lead to an adverse health effect or death. The potential hazard may be man-made or naturally occurring and may be voluntarily or involuntarily imposed upon an individual. These factors influence an individual's perception of what constitutes an acceptable level of risk.

For instance, many people who are afraid of flying will undertake a trip by car rather than by plane even though the risk of being killed is 25 times greater in a car wreck than in a plane crash. Such individuals perceive car travel to be safer. They believe they control the risk factor in a car and not in an airplane. In contrast, millions of people may live within floodplains where the probability of being injured or killed by a flood event may be several times greater than that of being adversely affected by drinking groundwater contaminated by a nearby landfill. Yet the landfill risk is deemed unacceptable while the flood risk is not. In this case, an individual's perception is biased by the belief that the flood is a natural event, and therefore an acceptable risk while groundwater contamination from the landfill results from man's activities and therefore presents an unacceptable risk.

People deal with risks on a daily basis. Some risks are real while other risks are perceived. Some risks are voluntary, some are involuntary. Questions that are often asked about building a consensus using risk information include; "How useful are comparative risk analyses? How can we deal with subjective risk perceptions which are grossly at variance with objective assessment? How do you counter 'wild' statements about risk? Should we focus on risk numbers? Consider the following risk statements:

"Concern has been expressed that Western Australian mineral sands workers are being exposed to radiation levels up to three times *international safety limits*."(7)

"The technique of toxic waste management is extremely hazardous, as has been well documented worldwide."(8)

"People have to realize low-level waste is more radioactive than uranium tailings... It is not as harmless as

has been made out. Workers who are exposed to even low levels will find it hazardous to their health."(9)

To deal with such risk statements one must use the consensus building model, make the most of first impressions, reflect on what was said as you put yourself in the position of an empathetic listener. Remember, "first seek to understand -- then seek to be understood" It is necessary to acknowledge that the viewpoint of another person has credibility in their paradigm. Remember, the key is to understand, not just try or pretend to understand. You don't have to agree, but you do have to understand WHAT is being said and the reason for WHY it is being said.

It is important to clearly relate the risk to something that is relevant to the listener and to explain the statistics and their relationship to reality. Risks are oftentimes compared to those incurred by one million people over the period of one year, or a lifetime. Lifetime risks of one chance of dying averaged over a million people are considered the same as natural risks and are not significant. Risks of one chance of dying for every 100 persons each year are considered unacceptable and corrective actions are certainly warranted.

Industries with fatality rates in the 10 to 100 in a million persons per year category are generally recognized as having high standards of safety. That is to say, the risk may be considered acceptable.

The International Commission on Radiation Protection and other radiation standards organizations have established radiation risk estimates. The estimates are based on research at high dose levels on humans, many animal studies and extrapolated from high-dose to low-dose levels. Whereas radiation is perhaps the most well studied and well understood etiological agent, the risk estimates at low dose can not be proven. They must be considered as hypothetical risk estimates. Because conclusive evidence is not possible at levels which approach or are within the statistical fluctuations of worldwide background radiation, the lack of conclusive evidence provides the substance for ongoing debate amongst the scientific community and the general public.

With respect to risks, the highest risks are either voluntary or could be greatly reduced as a matter of choice by the risk-takers. These types of risks include smoking, drinking alcohol, and the use of seat belts when driving.

Those making risk statements may be well received by the public, but carefully scrutinized and often criticized by their peers. For example, consider the following risk statements.

"The rare earths processing plant has accused opponents of spreading misinformation about the dangers of radiation.... (But) Recent research has shattered the myth that low level radiation can't harm you. Research by Alice Stewart has proved there is a significant in-

crease of cancers in children in areas where there is an increase in low-level radiation. THIS (emphasis added) scientist is famous for her research into the dangers of x-raying pregnant women."(10)

Risk information is helpful when one is seeking to be understood. It is best to use information from objective sources or if possible from the other sides sources. Comparative risk analysis are very useful in this step after trust and rapport are developed. However, they can be explosive when used before you understand the other person's paradigm. It is important to explain the statistics, use them appropriately and in an understandable context.

## CONCLUSIONS

Consensus building on radiation issues is challenging. Radiation is a word that evokes fear in most people. Detrimental effects of radiation are hard to measure. Therefore decisions are made based on communication and trust. It is essential to acknowledge the power of positive relationships in solving difficult environmental problems. Consensus building requires time. It is not and can not be done as a quick fix. It may require changes in attitudes and relationships. It is estimated that these changes take from three to seven years. It is also well known that frustration and resistance are a natural part of change.(11)

The rewards of consensus building are extraordinary! The task will be accomplished in a supportive environment. However, the process itself requires that each person involved must learn amount about himself and about the paradigms of others.

True consensus will be synergistic AND result in creative, WIN-WIN solutions.

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