

## **TWO VIEWS OF PUBLIC PARTICIPATION**

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### **ABSTRACT**

Risk perception has been studied extensively over the past several decades. This research has defined the differences that exist between and among various groups as defined by their education, interests, geographic distribution, and beliefs. It has also been repeatedly demonstrated that various public groups can and do have a tremendous impact on decisions made in the public and private sectors. Involved citizens for example, have caused international corporations as well as the Department of Energy to change or even reverse a chosen course of action. A frequent cause of such reversals is attributed to a lack of involvement of the public and other key decision players directly in the decision process itself. Through our research and case studies, we have developed both an “as is” and a “participatory” model of decision-making process. The latter decision model allows the direct involvement of important player groups. The paper presents and discusses these models in theoretical and practical terms taken from case studies of the Brent Spar disposal in the North Atlantic, and the use of incineration as a method of waste treatment at the Idaho National Engineering Laboratory. Results from the case studies are used to demonstrate why the “as is” model accurately describes the current situation, and how the “participatory model” will allow decisions to be made that are publicly supported and can be implemented. The use of such a model will provide users a framework from which to successfully make progress in a wide range of environmental endeavors cooperatively with the public, rather than in spite of the public.

### **THE STATUS QUO**

In the past, industry as well as DOE has engaged in a variety of technical analyses to support decision-making activities. These analyses have included risk assessments, economic analyses, and a variety of other initiatives to identify needed research and technology development. Unfortunately, involvement of the public in this process has been limited and at best, may be characterized as simply seeking approval of decisions already framed and in many instances, already made. The laws surrounding public involvement do require public meetings for comment and input but fall well short of establishing meaningful dialogue. Much of what may be discussed in public meetings revolves around the technical analyses supporting the decisions and/or a description of the planned activities. Such discussions essentially reduce the role of the public to one of approving a decision that has already been made. Upon presentation of such a decision, coupled with the lack of involvement, the public often objects to the decision and takes action, legal or otherwise, to stop its implementation. Figure 1 below is a simple linear model of that “as is” process.

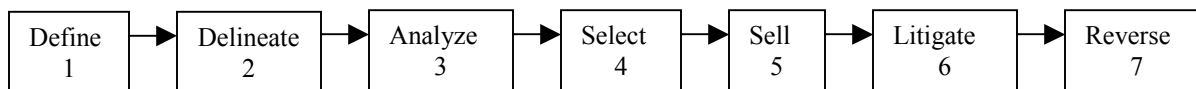


Fig. 1. As Is “Non-participatory” decision process model

We believe that the current process follows this seven-step flow. The decision-maker owns all but the sixth step of “litigate”, in our case DOE and/or industry. We typically define the problem, delineate the problem space, analyze the problem, select a solution (make a decision), attempt to sell the solution, and when unable to convince the public, face litigation and eventual reversal of the decision. The fact is, we do not really involve the public in our decision making process at all. The public who come to the meetings may not be the right public as described by the 1996 National Academy of Science in their report “Understanding Risk: Informing Decisions in a Democratic Society”(1), and in any case are not really engaged. Further, this lack of involvement may also have the unintended consequences of tainting the public’s perception of the underlying technical analysis or science presented to substantiate the decision. Often we fail to realize that decisions are, in fact, made on factors other than science. Science can be purposely ignored, not understood, or in some cases not trusted. Unfortunately, distrust of the scientific community has been steadily growing over the past several years (2). This fact coupled with the approval process depending upon the presentation of technical information from a scientist perhaps does not position us well for success. If the goal is to make and take decisions - to make technical progress - then perhaps this is not the most effective process.

## SUPPORT FROM CASE STUDIES

### Brent Spar

Much has been written about the Brent Spar incident (see 3, 4, 5, 6,7). The saga depicts a situation where although numerous risk, scientific, engineering, and other technical analysis were completed, an uninvolved, skeptical, and untrusting public stopped the disposal of the offshore oil storage structure in the deep waters of the North Atlantic - an alternative that had been clearly demonstrated from a risk and technical basis to be the best alternative. In fact the at sea disposal alternative had both the lowest comparative cost and the lowest environmental impact. The second best option was land dismantlement that was four times more expensive and had a risk factor some six times greater for workers. Based on the results of these studies Shell asked for permission from the UK government to complete the disposal and was granted permission. Shell and the UK government followed all established process and associated guidelines. Greenpeace occupied the Brent Spar prior to the issuance of the license and subsequent disposal. What followed was a lengthy and costly process where Shell eventually changed their entire process of public participation. Needless to say, Shell did not dispose of the Brent Spar at sea, although every technical and financial analysis suggested it was “the better “ alternative. Two observations concerning the Shell decision process important to our discussion are:

1. the established process, although not secretive, was not expressly open or transparent to the public, and

2. the public was not sought or consulted for input.

### **Advance Mixed Waste Treatment Project (AMWTP)**

As a part of the cleanup strategy at the Idaho National Engineering and Environmental Laboratory we are constructing a facility called the Advanced Mixed Waste Treatment Facility. In the original plans this facility had two major components, a waste compacting process that would treat approximately 78% of the waste and a second incineration process that would treat approximately 22% of the waste. The facility and its plans were fully vetted as required by law in public meetings where the processes were explained from a technical viewpoint and public comment received. The technical case suggested that risk from this facility was minimal. However, due to public concern over incineration, a lawsuit was filed by stakeholder groups and neighboring communities causing a halt in the process. Since then the incineration portion of the facility has been stopped and the DOE has named a blue ribbon panel to study alternatives to incineration. As in the case of the Brent Spar, although the best technical evidence supported one position, another was implemented. The final disposition of recommendations made by the blue ribbon panel is yet to be fully realized. The AMWTP case lends three additional observations to the Brent Spar:

1. the public was not involved as a legitimate partner
2. the public was not listened to
3. the underlying science was not compelling.

### **TECHNICAL BASIS FOR A NEW MODEL**

The two examples above are two of countless cases where government and industry has failed to include the stakeholders adequately in the decision making process. This is in spite of fundamental social science findings that clearly point out a more effective means for success. In particular, the social scientific literature argues for early participation and involvement of the public. In the U.S. National Academy of Science report "Understanding Risk: Informing Decisions in a Democratic Society" (1) they identify the following objectives in any decision:

- Getting the science right
- Getting the right science
- Getting the right participation
- Getting the participation right

They argue that these components are necessary for developing an accurate, balanced, and informative synthesis that will lead to a decision. The NAS report literally applauds the efforts to directly involve the stakeholder in the decision process. The NAS study further suggests that successful involvement depends on formation of the decision problem, analysis to improve participants' understanding (including analysis and uncertainties), and the active participation in the risk decision process. This approach is clearly not represented in the Figure 1 status quo model.

What must change is the current status quo where stakeholder involvement is best characterized as a collection of special interest groups motivated by political, social and economic bases all advocating a particular biased position. It is well documented that peoples' willingness to accept risk depends on multiple factors. Pentreath (8) describes this in terms of the nature of the risk, its uncertainty, who will be effected, who is analyzing the risk, as well as who will be taking the decision based on the information and what values and judgments are to be used. But what we have seen in stakeholder meetings across the spectrum is best described as engaging differing activist groups, while maintaining an informed and disinterested silent majority through rounds of public forum, resulting in mandates for more research and little action (9).

What is missing is the openness and transparency in the decision making process. This is not simply to gain trust but to gain a consensus of what needs to be done, who should do it, and who should pay for it (8). The public must be engaged in a dialogue of what the problems are, why they exist, whom they affect, and how solutions must be found that benefit all.

A variety of frameworks and approaches have been suggested. For example, Fischhoff (10) suggests that an approach must

- describe the decisions people face
- determine what information is critical to those decisions
- assess what people know
- identify gaps and then create the message

Others have argued against an approach that includes dealing with public perceptions of risk suggesting that the scientific elite is better equipped to make decisions (11). Some have referenced historical events such as the witch trials of Salem (12) that support their position that acting on the perception of risk is not always the best course.

Orkent (11) suggests that a more appropriate strategy is to work with respondents to help them understand issues and to develop stable positions. This means striking a balanced bias, emphasizing knowledge, dealing quantitatively with equity, risk aversion, control etc. But as scientists and engineers we first must also come to grip with our own bias and recognize that the fact that scientific research rarely resolves regulatory dilemmas (13). We are dealing with highly emotional issues for which scientific understanding does not yet exist or may never exist. While on the other hand we do know that the public will react to risk via value-laden sensitivities to technical, social, and psychological qualities of hazards (14).

Clearly technical analysis is vital for making risk decisions better informed, more consistent, and more accountable. However, the value conflicts and the pervasive distrust in risk management cannot be eliminated. Further, it is true that danger is real but risk is socially constructed, and whoever controls the definition of risk controls the solution to the problem. Change the rules and you can define risk in another way, thereby arriving at a totally different answer.

Boesch (15) argues that we must ask how to achieve the level of uncertainty needed for real-time political decisions, given that much knowledge about the environment will continue indefinitely to elude the firm grasp of science. Put another way, we must confront uncertainty and "free

ourselves from the illusion that science or technology (if lavishly funded) can provide a solution to resource or conservation problems” (16). Once such a view is adopted, “appropriate action becomes possible”.

## **AN ALTERNATIVE MODEL**

To address these multiple issues, we propose a process that is founded on early identification and involvement of the stakeholders. This process is illustrated in Figure 2 below.

The process begins with a step to define the initial problem space that will be shared with all the decision players. This step serves to define the problem space for the decision. This is a first step towards problem definition that will be further refined. Step two is the identification of an inclusive player taxonomy that will be a part of the participatory decision process. This is perhaps the most crucial step. Sufficient effort must be expended to ensure that all the right players are identified. To be sure, any potential concerned group must be represented in this taxonomy. This list also can be revised at any time when new players are identified. This step is meant to eliminate the problems associated with late arrival players, who feeling disenfranchised; seek drastic, unilateral means such as the legal system to stop an ongoing effort. The third step is when the full team comes together for the first time. The owners of the decision and the players together revisit the problem space using decision neutral tools that allow users to explore and better understand problem space before making a decision. An example would be simulating the effects of barrier leakage on an underlying aquifer. In this step the problem space or approach may be redefined so that all understand the parameters associated with the decision. Step 4 is where the issues and values associated with the problem space are explored. This includes all the technical, social, legal, economic, etc. issues and values that exist. For example it would have been possible to learn of the underlying concerns regarding disposal at sea for the Brent Spar or incineration for the AMWTP. Step 5 is where the solution alternatives are framed taking into consideration the defined issues and values. These solution alternatives are then analyzed based on issues and values in step 6, and in step 7 where a preferred alternative is selected. Concurrent to step 6 is step 9 where the team creates time-sensitive trigger mechanisms that allow taking advantage of new opportunities, catastrophes, and changing values if necessary. In steps 8 and 10 the solution and trigger mechanisms are implemented and monitored.

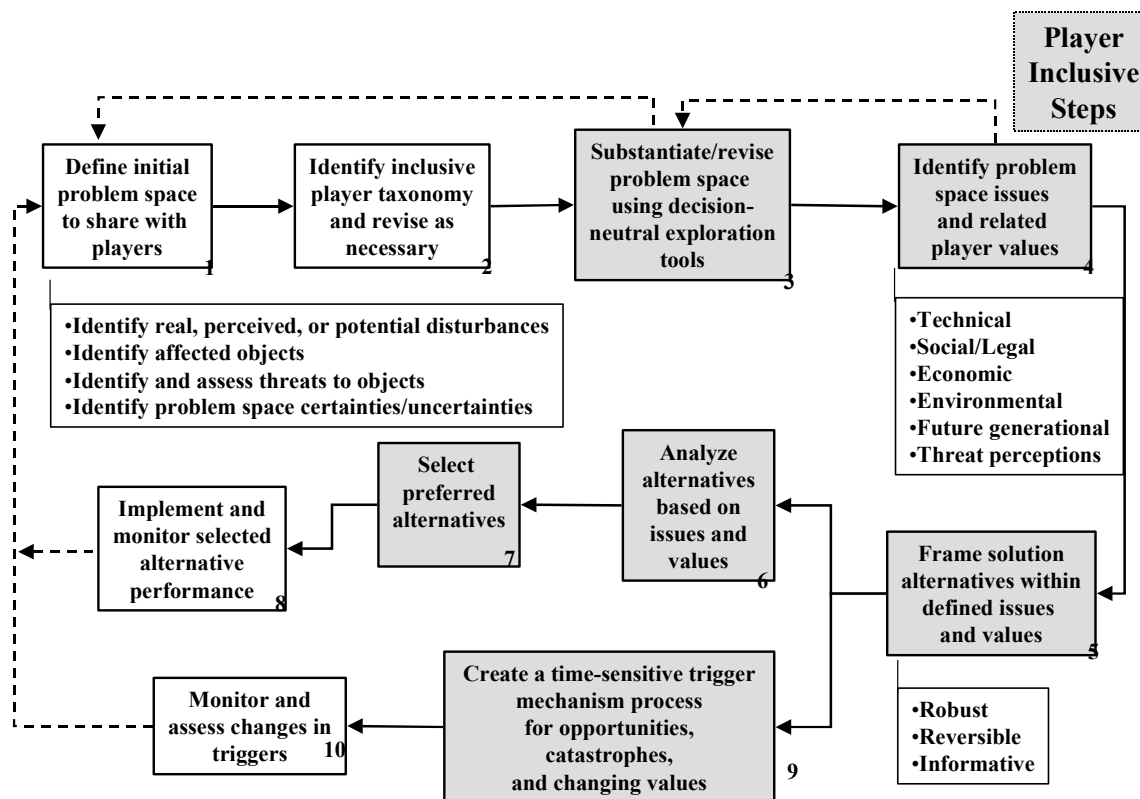


Fig. 2. A Participatory Decision Process

The case study of the Brent Spar lends additional support to this type of approach. What occurred after Greenpeace forcefully occupied the structure was the formation of a stakeholder/player inclusive team to re-address the problem. Shell created in the aftermath of Brent Spar a new decision process focused around dialog, seeking out Greenpeace and others to work jointly to identify the solution to the Brent Spar disposal problem. As such, Shell went back to step 2 and formed an inclusive player list that then formed the team that then completed the process. What resulted was an innovative solution to the problem that had previously not been identified. The decision was made to tow the Brent Spar to shore and to cut it up for use as a quay extension and ferry terminal project in Mekjarvik, Norway. This collaboration was so successful that you can now find a link to Greenpeace from the Shell Oil home page.

## CONCLUSIONS

The treatment of the stakeholders in the past is almost tantamount to treating them as a part of the problem, as opposed to a part of the solution. By doing so, we preclude any thinking about the stakeholder as a member of the team whose input is valued.

Our participatory approach takes advantage of the social science research base and ensures public participation occurs in order to make the decision process more democratic and thereby increase public acceptance of the resulting decision. As Thomas Jefferson has stated, "I know of no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion (from 17, p.14).

In short, science is necessary and valuable, but not sufficient. The public must be engaged in a dialogue that includes developing an understanding the problems, and how solutions might benefit all. Any decision made or process identified that is adopted should start with the active involvement of the public. We need to learn from the public, and work collaboratively with the public to ensure that the broader social context of risk is considered.

Within the last five years the INEEL and other DOE sites have entered into compliance agreements with their respective states and DOE. Such agreements currently exist for nine different sites in nine different states. These agreements were all entered into, and executed in, good faith, with parties believing that the milestones identified were achievable given adequate funding. With passing time, however, it is becoming increasingly apparent that due to funding shortfalls and the lack in some instances of significant advances in science and required technologies, some of the entered agreements may not be met. We are now learning in hindsight that the initial agreements did not adequately reflect all the issues (including public opinion), the maturity of the science, and a consistent treatment of the risks - both real and perceived. In addition, the concepts of cleanup and stewardship are rapidly evolving, requiring a more involved dialogue with the ultimate customer and waste custodian - the American public.

If industry and DOE are to be successful in its future endeavors, a consistent decision process/approach across the complex must be put into place. This approach must incorporate both the best available science, as well as stakeholder participation from start to finish, including direct involvement in the decision making process itself. This would represent a more balanced approach, as compared to the traditional unilateral "push" approach frequently used.

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