Management of Nonregulatory Driven Program Risks

Evaluation of program risk is a significant part of any environmental restoration (ER) activity. While significant efforts have been made to assess risk to human health and the environment, program risks outside of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are handled on a fire drill basis. This paper explains a process that looks at program risk, directs mitigation efforts in the most useful path, and focuses corrective actions to obtain the most benefit from the resources used.

1. The Idaho National Engineering Laboratory (INEL) ER Program currently looks at the program risk from the CERCLA standpoint, which is risk to human health and the environment. This is an expansion of the process from (a) what is the likelihood of an anomaly occurring (Likelihood) and (b) what is the consequence if it does (Consequence) to include an assessment of the opportunities of preventing the occurrence.

2. The program must consider a wide range of risks, for if they neglect these program risks they will be unable to avoid long-range pitfalls. Areas of risk that are important to a program are (a) Schedule, (b) Cost, (c) Quality, (d) Technology, (e) Business, (f) Health and Safety, and (g) Political. This paper addresses these anomalies based on Likelihood and Consequence. Likelihood is ranked from low (1) to high (5) and reflects the probability of an occurrence. Consequence is ranked from low (1) to high (5) and reflects the severity of the results. Each of these areas of risk are considered based on the 1 to 5 ranking.

3. The process to evaluate if a program should undertake some action and use resources to reduce or intercede in a given risk exposure is based on six questions in a three-step process for each of the risk areas.

   Step One
   How likely is the occurrence?
   What is the impact of the occurrence?

   Step Two
   How susceptible is the occurrence to mitigation by the program?
DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.
How susceptible is the impact to mitigation by the program?

And Step Three
What is the relationship of the cost of the impact to the cost of mitigation of the impact?
What is the relationship of the cost of the occurrence and the cost of mitigation?

These six questions are the relationship of cost of the occurrence to cost to mitigate risk. The interaction of the likelihood, consequence, and ability to mitigate form the foundation of management decisions to commit scarce resources to risks. The mathematics of the process are simple summation and averaging.

Based on the likelihood and consequence of an occurrence, review of mitigation opportunities and cost comparisons, a decisionmaker can decide whether to mitigate or not.

A comprehensive review of program risk will allow the limited funds available to be channeled where it will do the most good and reduce the impact of risk to the program.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.