Management has a number of responsibilities related to recommendation resolution. Their responsibilities include the following:

- *Review recommendations to evaluate feasibility, practicality, and effectiveness.* Management should review the recommendations from an overall facility and organizational perspective to make sure that each recommendation will have a high benefit/cost ratio across the organization.

- *Establish schedules for implementing accepted recommendations.* Management should verify that the recommendations are implemented in a timely manner by establishing a schedule and assigning resources to complete them.

- *Assign individuals the responsibility of implementing accepted recommendations.* In order to facilitate the implementation of the recommendations, clear responsibility for each recommendation must be established. Management must allocate sufficient resources, personnel, and capital for timely implementation of recommendations.

- *Evaluate recommendations as management of change items.* The recommendations should be evaluated and processed as part of the management of change process so that a proper risk/safety/ quality/security assessment is performed before the change is implemented. In addition, it will facilitate documentation and configuration changes.

- *Provide affected personnel with the necessary information/training about the recommendations.* Individuals affected by implementing recommendations need to be properly trained regarding the changes and effects resulting from implementation of the recommendations.

- *Document resolutions.* Management must verify that proper documentation of the resolution of each recommendation is performed. Resolution can include accepting the recommendation, accepting a modified recommendation, deferring the implementation until after further evaluation, or rejecting the recommendation for cause.

- *Track recommendations to completion.* Track the status of the accepted recommendations to verify timely completion, but be realistic with the time set for implementing long-term recommendations.

- *Look for opportunities to reduce risks in other systems, facilities, or processes by applying recommendations from the current investigation to those areas.*

6.8 Examples of Reasons to Reject Recommendations

In certain circumstances, some of the recommendations made by the investigation team should not be implemented. As management reviews the recommendations, they should consider the following reasons to reject or modify the recommendation:

- *A detailed analysis following the investigation indicated that the suggestion was not a good idea because...* As management reviewed the recommendation, they found that the team did not identify some of the potential risks of implementing the recommendation.

- *A detailed review of the recommendation found that the recommendation is not as beneficial as originally thought.* As management reviewed the recommendation, they found that the benefits of the recommendation were overestimated by the investigation team.

- *Other information, which was not available to the investigator/investigation team, indicates that the potential problem is not as significant as the analysis results indicate.* As a result, the recommendation is not needed or can be modified.

- *The situation has changed; the recommendation is no longer valid because...* Typically, this occurs when the organization has already made some changes following the incident, the operation of the facility has changed, or there is an extended period between the incident and the analysis.

- *The recommendation is no longer necessary because other recommendations have already been implemented or are planned for implementation.* For example, a recommendation was made to

have more data collected during routine rounds and tours. However, use of new computer sensors and collection of the data by the computer makes the need for additional manual data collection unnecessary.

- *The recommendation, although somewhat beneficial, does not provide as much benefit as...* There is a better way to correct and address the issue. Therefore, the alternative recommendation will replace the one under consideration.

Therefore, as management takes an overall view of the recommendations, they need to consider the potential risk reduction provided by implementing each recommendation. In addition, they need to consider the other implications of implementing the recommendation. Every time a change is made, additional hazards and risks are introduced. An assessment (often called a management of change assessment) needs to be made to determine whether the recommendations truly reduce the overall risk for the facility and the organization.

6.9   Assessing Benefit/Cost Ratios

One method for prioritizing recommendations is to assess the benefit/cost ratio for each recommendation. To estimate this ratio, both the benefits and the costs of implementing the recommendation need to be assessed.

6.9.1   Estimating the Benefits of Implementing a Recommendation

Estimating the benefits of implementing a recommendation should consider the total life-cycle benefits of the change. This can be computed as follows:

Current expected costs of potential losses

minus

Expected costs of losses that could occur while implementing the recommendation

minus

Expected costs of potential losses after implementing the recommendation (residual losses)

equals

Expected benefits

In detailed assessments of recommendations with high benefits, the time when benefits are realized (e.g., only after five years) may be important because of the time value of money.

6.9.2   Estimating the Costs of Implementing a Recommendation

Estimating the costs of implementing a recommendation should consider the total life-cycle costs of the change. This can be computed as follows:

Initial implementation costs (design, equipment, installation, procedures, etc.)

plus

Annual costs for ongoing implementation (utilities, maintenance, testing, training, etc.)

plus

Any special cost items in the future (rebuilds/replacements, retraining, etc.)

equals

Expected costs

In detailed assessments with significant costs, the time when costs are realized may be important because of the time value of money.