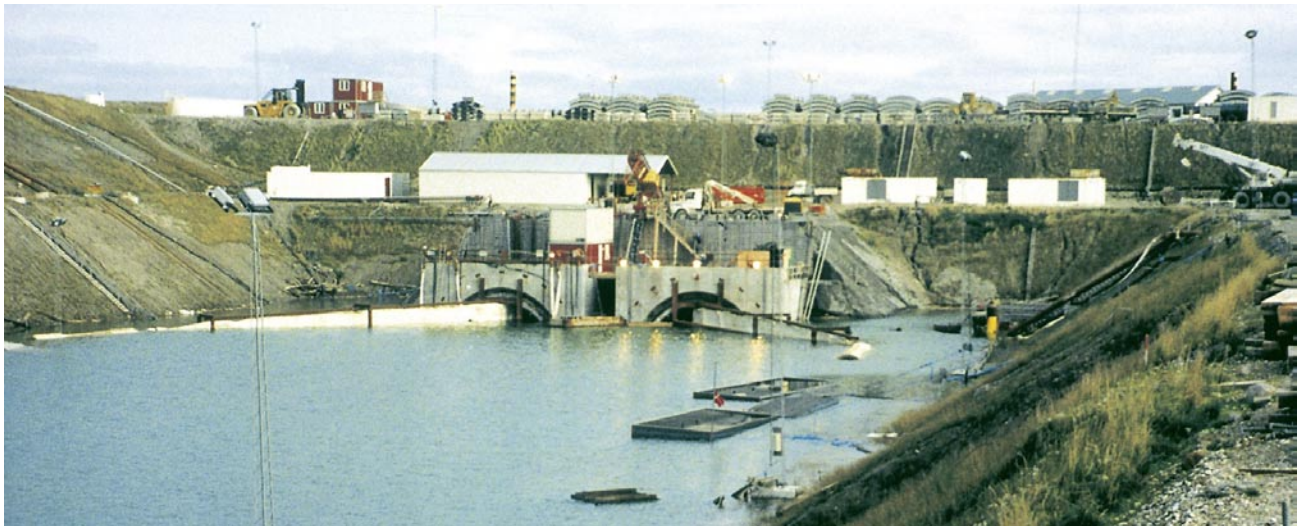
# Risk Assessment
# Innovative Construction Projects



*Significant hazard screening is an integral project element.*

Ben C. Gerwick, Inc., in association with professor C. A. Cornell, have recently performed a risk assessment study of an innovative construction project on the U.S. Corps of Engineers inland waterways system. This Risk Assessment Study was in support of research efforts in risk assessment underway at the U.S. Army Engineer Research and Development Center (ERDC), Waterways Experiment Station (WES).

Probabilistic techniques have developed in recent years into an effective means of assessing risk assumed during major construction projects such as to the innovative construction currently under way on the inland waterways system. It has been shown that the innovative construction methods being used are the most cost effective means of construction and are within the current technical capabilities of the construction industry. Risk assessment is a method that can identify, estimate, quantify, and evaluate the risks associated with these innovative construction concepts.

Various types of risk assessments can be undertaken during the course of a marine project. Typically, these phases include the feasibility, design and analysis, plans and specifications, and construction phases.

If comprehensive risk assessment data are not available, data estimates can be made. Historical data from examples of similar marine construction projects are a method of quantifying an independent check of risk assessment results.

Although informal risk evaluation and intuition have always been an integral part of construction management, formal risk assessments can significantly influence major decisions throughout all project activities by determining and quantifying safer, less costly alternatives and mitigation procedures with minimized risk.

*Innovative construction project.*

**Tasks included in a formal risk assessment methodology are:**

- **Description of the project (activities, schedule, locations etc.).**
- **Identification of hazards.**
- **Qualitative assessment of hazard occurrence probability and consequences.**
- **Screening of significant hazards.**
- **Quantitative analysis of significant hazards.**
- **Evaluation of quantified risk.**
- **Identification and evaluation of risk mitigation strategies.**
- **Implementation of mitigation strategies.**
- **Iteration to include mitigation actions until project risks are acceptable.**

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