

## Prevention of Problems on Reliability and Safety

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We must make every effort to prevent serious problems of reliability and safety. The key to such prevention is “prediction” and “up-stream management.” There are two approaches to prediction: induction and deduction. The induction approach includes (1) sharing experiences and histories, (2) abstraction and generalization of individual problems, and implementation of the PDCA cycle, and (3) application of Heinrich’s law. The deduction approach is based on scientific theory and engineering technology. And these two approaches are integrated by “up-stream management” of top-managers, and “systems approach” which consists of seven viewpoints for prediction: objectives (desired functions), input items, mechanisms needed to achieve desired functions, internal and external stresses, failure mechanism, failure mode/top event mode, and effect. Especially, the importance of “top event mode” and “failure mode” is stressed on the talk.

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