
API Recommended Practice 580

Risk-Based Inspection, Second Edition

API Recommended Practice 580 provides users with the basic elements for developing, implementing and maintaining a risk-based inspection (RBI) program. It provides guidance to owners, operators, and designers of pressure-containing equipment for developing and implementing an inspection program. These guidelines include means for assessing an inspection program and its plan. The approach emphasizes safe and reliable operation through risk-prioritized inspection. A spectrum of complementary risk analysis approaches (qualitative through fully-quantitative) can be considered as part of the inspection planning process. RBI guideline issues covered include an introduction to the concepts and principles of risk-based inspection for risk management; and individual sections that describe the steps in applying these principles within the framework of the RBI process include:

- a) understanding the design premise;
- b) planning the RBI assessment;
- c) data and information collection;
- d) identifying damage mechanisms and failure modes;
- e) assessing probability of failure;
- f) assessing consequence of failure;
- g) risk determination, assessment and management;
- h) risk management with inspection activities and process control;
- i) other risk mitigation activities;
- j) reassessment and updating;

- k) roles, responsibilities, training and qualifications;
- l) documentation and record-keeping.

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