



RBI CASE STUDY

INSIGHTS FOR TOMORROW.

DATA VALIDATION IN THE RBI WORK PROCESS

A typical Risk-Based Inspection (RBI) project can span multiple process units with thousands of pieces of equipment. Every piece of equipment is divided further into components for analysis. Each of these components requires the input of several hundred parameters, totaling thousands of data points that need validation.

⚠️ PROBLEM

With such a large number of parameters, there is a possibility of overlooking potentially erroneous data. As a result, the RBI group has developed a set of quality control tools that help the project manager review the following types of data involved in an RBI analysis.

✅ QUALITY CHECKS



Each of these quality checks validates multiple data points pertaining to its respective category. For example, in the Inspection History check, one test compares furnished wall thickness with field-measured wall thickness in order to identify inspection data that may require further review. As another example, in the Operating Data check, one test compares the design pressure and the operating pressure to ensure that the equipment is not exceeding its design specifications, as shown in the table below.

EQUIPMENT	COMPONENT	DESIGN PRESS (PSIG)	OPERATING PRESS (PSIG)	FLAG	DESIGN TEMP (°F)	OPERATING TEMP (°F)	FLAG
T-101	T-101-BTM	285	300	NEEDS REVIEW	500	560	NEEDS REVIEW
T-101	T-101-TOP	285	280		500	480	
D-111	D-111	170	110		400	520	NEEDS REVIEW
D-222	D-222	50	60	NEEDS REVIEW	100	79	

BENEFITS TO THE CLIENT

These quality checks allow the project manager to identify and resolve any potential discrepancies in the data to create a more accurate inspection plan for the client. The data validation also identifies problem areas outside RBI that may need further evaluation. In the case of D-111, shown in the table, the end user may consider mitigation techniques such as an operational change or a rerate of the vessel. Data validation is an integral component of E²G's RBI work process and helps maintain the accuracy and integrity of our clients' data, which is critical to a highly effective RBI program.

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