Failure Mode Analysis Summary

Definition

A **failure mode** is any event that causes a functional failure. It describes how an asset fails to perform its intended function.

Documenting Failure Modes

When documenting failure modes, you should:

1. List the functional failures first (loss of function)
2. Then record the failure modes that cause each functional failure
3. Use specific descriptions with at least a noun and a verb
4. Use precise verbs instead of generic terms like "fails" or "breaks"
5. Provide enough detail to develop a strategy without excessive analysis

Example Structure

Function	**Functional Failure**	**Failure Mode**
To transfer water from tank X to tank Y at not less than 800 liters/min	A: Unable to transfer any water at all	1: Bearing seized
		2: Impeller comes adrift
		3: Impeller jammed on foreign object
	B: Transfers less than 800 liters per minute	1: Worn impeller
		2: Partially blocked suction line

Importance of Failure Mode Analysis

- A single machine can fail for dozens of reasons; an entire plant could have tens of thousands of possible failures
- Day-to-day maintenance is managed at the failure mode level
- Maintenance meetings typically focus on what has failed, causes, repairs, and prevention
- Proactive maintenance requires identifying likely failure modes before they occur
- Identifying failure modes is essential for developing systematic proactive maintenance strategies

By analyzing failure modes properly, maintenance teams can shift from reactive to proactive management of physical assets.