



5Whys

Investigation Report

Incident Date

09/06/2021

References No.

5Whys-2021-1

Incident Details

Incident Title

P100 Bearing failed

Incident Brief Summary

P100 Pump bearing failed within 2 months of replacement.

Problem Statement

Expected

P100 Bearing should operate for its provided life of 10 years

Actual

P100 Bearing failed within 2 months of replacement on 10th June 2021.

Impact

Production loss: 100 M3 & Maintenance Cost : 1000 USD

Equipment Details

Equipment Type

CENTRIFUGAL PUMP

Plant/Unit

HDPE PLANT

Equipment Description

Test

Equipment TAG Number

P100

5whys Team Leader

Investing Leading Department

Team Leader

Team Member

Consequences and Likelihood

People

No Effect

Asset (Production & Maintenance Cost)

No Effect

Reputation

No Effect

Environment

Slight effect

Likelihood

Heard in the industry

Sequences of Events

Date

10/06/2021

Action Taken

P100 tripped on bearing vibration high



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Investigation Analysis

	Question	Answer	Supporting Evidence
Why 1	P100 Tripped on Bearing vibration high	Bearing vibration value reached at trip settings (Genuine)	DCS TRENDS
Why 2	Bearing vibration value reached at trip settings (Genuine)	Bearing Mechanical looseness detected by vibration system.	Vibration system diagnostic Report
Why 3	Bearing Mechanical looseness detected by vibration system.	Bearing Cover found loosened	Physical observation by main. team.
Why 4	Bearing Cover found loosened	Bearing cover not tightened properly during assembly	Logical conclusion
Why 5	Bearing cover not tightened properly during assembly	Mechanical technical did not follow tightening procedure.	Interviews with Technician.

Identified Root Cause

Human Error

Identified Latent Cause

Competency

Immediate Corrective Action Taken

Date	Action Taken	Action By	Department	Status
10/07/2021	Bearing replaced	admin	Mechanical	Completed

Preventive Action to Prevent Recurrence

Action ID	Date	Action Priority	Action Description	Action By	Department
5Whys-2021-1- 1	31/07/2021		Provide training to all technician on the bearing assembly procedure	admin	Mechanical



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Conclusion

The lack of bolt tightening to the technician led to the bearing looseness and further damage to the bearing.

Lesson Learnt

Periodic review of the competency of the technician on critical assembly is advisable

Learning Type

ENHANCE COMPETENCY

Prepared By

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Quality Checked By

Approved By

Prepared On

21/07/2021

Quality Checked On

21/07/2021

Approved On

21/07/2021



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