EI Research report

Measures and key performance indicators to manage maintenance in upstream petroleum production

energy institute

RESEARCH REPORT: MEASURES AND KEY PERFORMANCE INDICATORS TO MANAGE MAINTENANCE IN UPSTREAM PETROLEUM PRODUCTION

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PREFACE

The work contained in this research has been developed and supported by a working group with oversight provided by the Energy Institute (EI) Process Safety Committee.The intention of the research was to identify the state of practice with respect to maintenance management measures and key performance indicators. It is worthwhile to state that the working group did not universally subscribe to the recommendations of the report as described in Section 7, but all believed that there is genuine value to these being included in their entirety in the published report.

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1 INTRODUCTION

1.1 INTRODUCTION

This research report details the findings and recommendations of a research project into maintenance performance measures for the upstream oil and gas industry conducted on behalf of the EI.

1.2 SCOPE

The original scope of work provided by the EI was '*to research measures and key performance indicators to manage maintenance in order to develop guidelines on the practicalities of reporting maintenance management measures and KPIs*'.

The following tasks were to be undertaken:

- Review of ISO 20815:2008 and ISO 14224:2016 in the context of OSCR and PFEER.
- Review of additional standards, guidelines and reports as listed in Annex B. (Note: this list was expanded from the original requirement).
- Establish by bilateral engagement, current operational practices within the upstream petroleum sector, including how they use the findings of the outputs of verification assessments and how they use data to demonstrate SECEs (Safety and Environment Critical Elements) meet their performance standards (e.g. for availability and reliability).
- Establish by bilateral engagement, sector based reporting requirements.

The industry scope was upstream petroleum from subsea through to production/export, as per the intent of ISO 20815. ISO 14224 has a broader industry scope, but includes those upstream petroleum sectors.

Note: due note has been taken in this report of the update to BS EN ISO 20815:2018.

1.3 OBJECTIVES

The primary objective of this project was to develop guidelines on the practicalities of reporting maintenance management measures and KPIs covering:

- their definitions;
- what should be in/out of scope, and
- suitable times to run reports.

In particular, the project was to investigate the following typical KPIs:

- maintenance and inspection backlog;
- safety critical element (SCE) pre-planned maintenance (PPM) compliance (updated to SECE PPM compliance to align with latest versions of UK legislation);
- PM deferral compliance;