

Digitalize Design Review & HAZOP Action Closeout Process

Presenter: Malak Al Azzani

Process Engineer in petroleum development Oman

Introduction

Petroleum Development Oman (PDO) is the leading exploration and production company in the Sultanate of Oman, responsible for over 70% of the country's crude oil production and a significant portion of its natural gas supply. PDO executes around approximately 100 projects annually.

In Project Engineering Phase Two critical assurance review owned by process engineering discipline

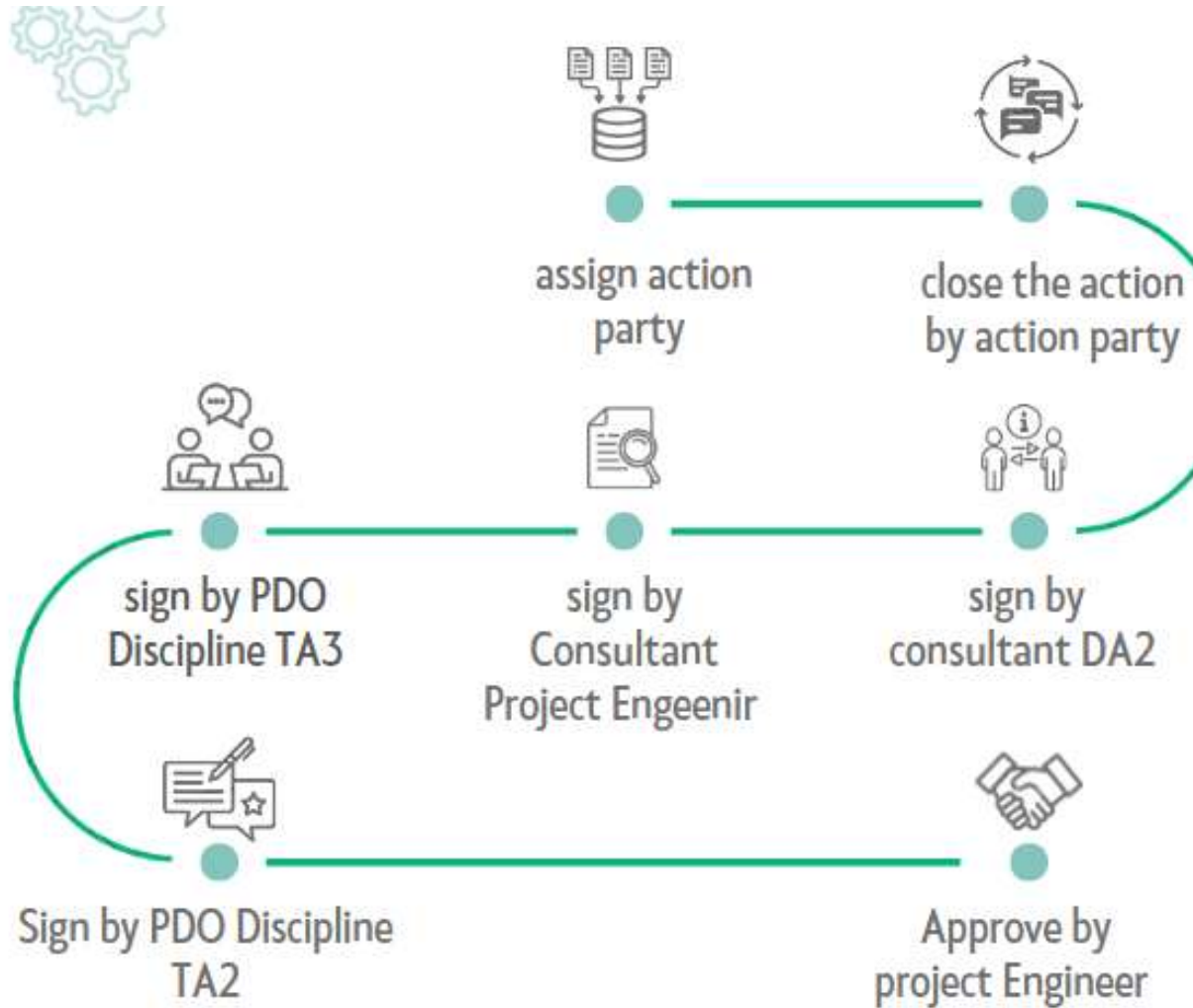
1. Design Review

2. HAZOP



IChemE

Old Methodology



- Slower processing times
- Extensive manual effort required for monitoring and tracking
- Lack of a centralized platform for storing actions
- Prolonged communication delays between consultants and PDO

New Digitalize Approach

Develop New System

Upload Actions

Add Action Resolution

on tracking system that focuses on tracking actions from different activities and events. T
efficiency through simple tracking in this solution.



le for capturing Adhoc Action which are not
L.



Engineering and Project Delivery
schedule/capture predefined workshop(s) on
eTrack.

Parameter: <input type="text" value="Select Parameter"/> Guideword: <input type="text" value="Select Guideword"/>			
ber 11 17	Parameter	Guideword	Current Status
	Pressure	More	Action Created (Event Own
	Pressure	More	Action Created (Event Own
	Operability	Isolation	Resolution Submitted (Acte
	Pressure	Less	Action Created (Event Own
	Pressure	Less	Action Created (Event Own

ng System

Resolution Needed Current Status

Resolution Submitted (Action Part)

It is performed for the blocked outlet at Amal Export header 18. Closure of 18" valves (79VSL-200118/200119) downstream of
mainly, the Amal Export header is protected by 18" and Relief valves. Primary protection 18" 79-PQ2A-200A/B/C 18" and 79-1
(2000J 12 x 500) (set at 2000 kPa) along with rupture disc (set at 2050 kPa). The relief valves are used to handle the flow
whenever 18" export network is being carried out under a separate project (R&M ID 55105053.111) and only change the
1000A/B/C and 1001A/B/C are provided to protect the Amal Export pumps P-1001A/B/C and Amal export pumps P-1001A/B/C.
Closure of any of the 18" valves (79VSL-200118/200119) downstream of OMS header with relief valve 79VR-200011/200012 open

Description	Type	Maximum
Amal Export pump P-1001A/B/C	Centrifugal	4000
Amal Export pump P-1001A/B/C	Centrifugal	4000
Amal Export pump P-1001A/B/C	Centrifugal	4000
Backwash transfer pump P-1001A/B	Centrifugal	4000
Backwash transfer pump P-1001A/B	Centrifugal	4000

the table below: Table 1.0- Design Pressure summary

MP 1315 kPa at the 24" OMS header exceeds the OMS design pressure of 4750 kPa due to mis pressure Amal West export
regard of overall network and a separate project is being carried out to re-design the pump with new VIB and impeller
at site and hence the transient is analyzed based on the new pump curve and the maximum discharge pressure of 4200 k
related MP 1315 kPa) is less than the OMS design pressure of 4750 kPa and hence pump shut-off exceeding the OMS des
ed port installation and operation of all these Amal West export pumps P-1001A/B/C and P-1001A/B/C are planned to commission
test & performance test is ongoing. Expected completion is end of July 2024 and P-1001A/B & C are planned to commission
will be under operation (Refer Attachment 7) prior to Amal Export Header project which is scheduled Q3 2024.

Cont.'

Approve the Action

Is Approver Assignment Approval Always Required? Approver

100	<input type="text"/>	Approver	Company No. / Name / R
101	<input type="text"/>	Approver	Company No. / Name / R
102	<input type="text"/>	Approver	Company No. / Name / R
103	<input type="text"/>	Approver	Company No. / Name / R
104	<input type="text"/>	Approver	Company No. / Name / R

Generate Action closeout

stream of the control valves (22-FCV-014 and 22-FCV-016) in

it isolation and 22-VBL-015 is available for the isolation of tri
le, also, M-2201 is operating at lower pressure than the trea
ply to other PSU units (M-2202/03/04/05) of control valves (I
EFS: POLYMER SLICING UNIT M-2201 - MAR-22-000000-PX-
OLYMER SLICING UNIT M-2203 - MAR-22-000000-PX-2365-S
YMER SLICING UNIT M-2205 - MAR-22-000000-PX-2365-910

APPROVER NAME
abu, Anitha ATN32PR
irni, Aslam ATN33PM
mri, Yaqoob DEP25
ikal, Satish DEP26
li, Siham DAR4

Benefits

E-Track application enable the following:

Track the progress of actions closeout and continually improve the closeout process.

Simplify and improve Engineering workshop actions closeout.

Streamline the review and approval of review actions and ultimately enhance the delivery of PDO Projects and FIPs.

Producing Action closeout sheet from the E-track tool with the approved responsible engineer rather than the manual signature.

Enhancing the digitalization of the EPSF-6

Tracking and monitoring the progress of actions closeout

Preventing any bypass of the approval cycle.

Provides an easy access to the data base of a project's assurance, and reviews actions for any company auditing and references.

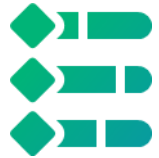


Challenges



Introduced the tool to all relevant Engineering, Operations, and Project teams within PDO.

Presented the tool to more than seven consultant engineering companies.



Created separate user accounts for all engineering disciplines for external users

Resolved format and numerical error issues.



Develop and digitalize the process flow

End

Digitalize the DR/HAZOP actions closeout is a major improvement in project management in PDO. It enhances PDO's digital transformation journey



شركة تنمية نفط عُمان
Petroleum Development Oman