PTT Public Company Limited

Upstream Petroleum and Gas Business Group

Natural Gas Transmission

Natural Gas Transmissione System Inspection & Maintenance Program 2024

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Item	Inspection / Maintenance Activity	ML	Offshore					Onshore				All						Reference		Responsible						Remarks
			TSO	TSO/GSM		TSO		TSO	TSO/GSM	NGR/NGV																
			Trunk Line	Branch	Piping	Pressure Vessel	Platform Structure	Mainline	IPP&SPP (Class 3 / 4)	Distribution (Class 3 / 4)	UG asset in Station	Piping in Station	Pressure Vessel in Station	Asset on Pipe Rack	Decommissioned	Abandoned with PM	Abandoned	Schedule / Form	Procedure / WI	Plan Action	Prepare TOR	Procure	Execute & Submit	Analyze & Report	Keep Record	
	Mechanical damage control : Patrolling																									
1	Patrolling (Vehicle)	ML1	-	-	-	-	-	2W, 2/W	2/W	2/W	-	-	-	-	6M	6M	-	F-รท.วรค.-0022	I-วรค.-2038	R	-	-	R	R	R/E	Class 1&2 / Class 3&4
2	Leakage Survey and Ground/ Crossing Patrolling	ML1	-	-	-	-	-	3M	3M	3M	-	-	-	-	1Y	1Y	1Y	F-รท.วรค.-0022	I-วรค.-2042 I-วรค.-2043	R	-	-	R	R	R/E	
3	Vault Inspection	ML1	-	-	-	-	-	-	1Y/5Y	1Y/5Y	-	-	-	-	1Y	1Y	1Y	F-รท.วรค.-0022	I-วรค.-2045	R	-	-	R	R	R/E	Visual & Gas Leakage Check without open Vault / Visual & Gas Leakage Check with open Vault
4	Aerial Patrolling	ML1	-	-	-	-	-	3M	3M	-	-	-	-	-	1Y	1Y	1Y	S-รท.วรค.-01-0014 F-รท.วรค.-0022	I-วรค.-2039	E	E	E	R/E	R/E	R/E	Except PL region 4, 7
5	Soil Erosion Survey	ML1	-	-	-	-	-	1Y	1Y	1Y	-	-	-	-	1Y	1Y	-	S-รท.วรค.-01-0021	I-วรค.-2043	R	R	R	R	R/E	R/E	
6	Pipeline Settlement Survey	ML2	-	-	-	-	-	-	-	-	-	1Y	-	-	-	-	-	S-รท.วรค.-01-0016 F-รท.วรค.-0024	I-วรค.-2044	R	-	-	R	PE/E	R/E	
7	Offshore platform structure settlement surrey	ML2	-	-	-	-	2Y	-	-	-	-	-	-	-	-	-	-	F-ษผ.ปลค.-0001	I-ษผ.ปลค.0036	OF	OF	OF	OF	OF/E	OF/E	For platform, Topside will be inspected only
8	ROV Survey (Visual inspection, Free span)	ML3	5Y	5Y	-	-	-	-	-	-	-	-	-	-	5Y	5Y	-	S-รท.วรค.-01-0003	-	OF	OF	OF	OF	OF/E	OF/E	
9	ROV Survey (Visual inspection, FMD)	ML3	-	-	-	-	5Y / 7Y	-	-	-	-	-	-	-	5Y	5Y	-	-	-	OF	OF	OF	OF	OF/E	OF/E	ERP 5 Year / PRP 7 Year
	External corrosion control : Cathodic Protection System, Protective Coating system																									
1	P/S Potential Survey (on-off) @ Test Post	ML2	-	-	-	-	-	6M	6M	6M	6M	-	-	-	1Y	1Y	-	F-รท.วรค.-0004	I-วรค.-2003	R	-	-	R	E	R/E	
2	Casing Inspection	ML2	-	-	-	-	-	6M	6M	6M	-	-	-	-	1Y	1Y	-	F-รท.วรค.-0006	I-วรค.-2005	R	-	-	R	E	R/E	
3	Bond Box Inspection	ML2	-	-	-	-	-	1M/6M	1M/6M	1M/6M	1M/6M	-	-	-	1Y	1Y	-	F-รท.วรค.-0003	I-วรค.-2014	R	-	-	R	E	R/E	Not interrupt CP current / Full inspection
4	Anode Groundbed Inspection (ICCP) ROV (Anode/Electrolyte Potential Survey)	ML2	5Y	5Y	-	-	5Y / 7Y	-	-	1Y	1Y	-	-	-	5Y	5Y	-	S-รท.วรค.-01-0018 F-รท.วรค.-0007	I-วรค.-2006	R	-	-	R	E	R/E	ERP 5 Year / PRP 7 Year
5	CP Transformer Rectifier Inspection	ML1	-	-	-	-	-	-	-	-	-	1M	-	-	1Y	1Y	-	F-รท.วรค.-0005	I-วรค.-2004	R	-	-	R	E	R/E	
6	AC Mitigation Inspection (DC Decoupler, Surge protecting device, Zn ground wire/mat)	ML2	-	-	-	-	-	1Y	1Y	1Y	1Y	1Y	-	-	-	-	-	F-รท.วรค.-0004	I-วรค.-2003	R	-	-	R	E	R/E	
7	Close Interval P/S Potential Survey (CIPs) ROV (Pipe/Electrolyte Potential Survey)	ML3	5Y	5Y	-	-	-	5Y	5Y	5Y	5Y	-	-	-	10Y	10Y	-	S-รท.วรค.-01-0008 S-รท.วรค.-01-0009 F-รท.วรค.-0008	I-วรค.-2009	R	R	R	R	E	R/E	
8	Coating Defect Survey (DCVG), ACVG, PCM ROV (Voltage Gradient Survey)	ML3	5Y	5Y	-	-	-	5Y	5Y	5Y	5Y	-	-	-	10Y	10Y	-	S-รท.วรค.-01-0008 S-รท.วรค.-01-0009 F-รท.วรค.-0026 F-รท.วรค.-0027	I-วรค.-2018 I-วรค.-2019	R	R	R	R	E	R/E	
9	Insulating Joint or Flange Inspection	ML1	-	-	-	-	-	-	-	-	-	1Y	-	1Y	-	-	-	F-รท.วรค.-0011 F-รท.วรค.-0025	I-วรค.-2015 I-วรค.-2016	R	-	-	R	E	R/E	
10	CP Online Calibration (P/S, TR-V,TR-C)	ML2	-	-	-	-	-	-	-	-	-	1Y	-	-	-	-	-	F-รท.วรค.-0009 F-รท.วรค.-0010 F-รท.วรค.-0039	I-วรค.-2013 I-วรค.-2012 I-วรค.-2046	R	-	-	R	E	R/E	
	External Inspection / Direct Examination																									
1	General surface / coating condition inspection	ML1	-	-	1Y	-	1Y	-	-	-	-	1Y	5Y	1Y/5Y	-	-	-	F-รท.วรค.-0053	-	R/OF	-	-	R/OF	E	R/OF/E	For platform, Topside will be inspected only For pipe rack, Visual/Close Visual Inspection
2	Splash zone / soil to air piping inspection	ML1	-	-	1Y	-	1Y	-	-	-	-	1Y/5Y	-	1Y/5Y	-	-	-	F-รท.วรค.-0017	I-วรค.-2024	R/OF	-	-	R/OF	E	R/OF/E	Visual / Full Inspection
3	Corrosion under pipe support Inspection	ML1	-	-	1Y/5Y	-	-	-	-	-	-	1Y/5Y	-	1Y/5Y	-	-	-	F-รท.วรค.-0033	I-วรค.-2023	R/OF	-	-	R/OF	E	R/OF/E	Visual / Full Inspection
4	Corrosion under insulation (CUI) Inspection	ML1	-	-	1Y/5Y	-	-	-	-	-	-	1Y/5Y	-	-	-	-	-	F-รท.วรค.-0036	-	R/OF	R/OF	R/OF	R/OF	E	R/OF/E	Visual / Full Inspection
5	Wall Thickness Inspection @ critical location	ML1	-	-	5Y	5Y	-	-	-	-	-	5Y	5Y	5Y	10Y	-	-	F-รท.วรค.-0020 S-รท.วรค.-01-0013	P-ท.ทค.-0502 I-วรค.-2058	R/OF	-	-	R/OF	E	R/OF/E	Only for process gas
6	Crack inspection	ML1	-	-	-	EA	-	-	-	-	-	-	EA	-	-	-	-	S-รท.วรค.-01-0013	-	OF	OF	OF	OF	E	OF/E	Crack inspection at weld joint
7	Hottapped Coupon Measurement	ML1	EH	EH	-	-	-	EH	EH	EH	-	EH	-	-	-	-	-	Coupon Inspection	-	-	E	E	R	E	R/E	
8	Excavation & Direct Examination	ML3	-	-	-	-	-	EP	EP	EA	-	-	-	-	-	-	-	S-รท.วรค.-01-0019	-	E	R	R	R/E	E	R/E	Dig site verify after Pigging, DCVG, Hottap
	Internal corrosion control : Chemical Threatment , Moisture dewpoint control																									
1	Moisture control		Monitoring	Monitoring	-		-	-	-	-	-	-	-	-	-	-	-	-	-	OF	OF	OF	OF	OF	OF	
2	Inhibitor Injection		Monitoring	Monitoring	-		-	-	-	-	-	-	-	-	-	-	-	-	I-ทผ.ปลค.-1064	OF	OF	OF	OF	OF	OF	
	Internal Inspection : Cleaning, Inline & Sample Inspection																									
1	Cleaning Pig	ML2	Cond.	-	-		-	Cond.	Cond.	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0007	-	E/R/OF	R/OF	R/OF	R/OF	E	R/E/OF	R to sampling & send desposit/liquid to Q
2	Corrosion (MFL) Pig	ML3	3Y	-	-		-	3Y	3Y	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0003 S-รท.วรค.-01-0007 S-รท.วรค.-01-0008	-	E/R/OF	E	E	R/E/OF	E	R/E/OF	
3	Geometry (Caliper, Gauge, 3D) Pig	ML3	3Y	-	-		-	3Y	3Y	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0003 S-รท.วรค.-01-0007 S-รท.วรค.-01-0008	-	E/R/OF	E	E	R/E/OF	E	R/E/OF	
4	Chemical analysis (Deposit, Liquid)	ML2	EP	-	-		-	EP	EP	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0003 S-รท.วรค.-01-0007 S-รท.วรค.-01-0008	-	E	Q	Q	R/E/OF	Q	E	From Pig, Filter, Seperator, Slug catcher
5	Corrosion Probe / Coupon Measurement	ML2	3Y	-	-		-	3Y	-	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0015	I-วรค.-2035	E	E	R/OF	R/OF	R/E/OF	R/E/OF	
	Other																									
1	Location Class Survey	ML2	-	-	-		-	5Y	5Y	-	-	-	-	-	-	-	-	S-รท.วรค.-01-0003	-	A	A	A	A	A/E	A/E	Including aerial photo procurement

Remarks : The above inspection intervals are minimum requirement, more frequent inspection may required at specific location.

- W = Weekly, M = Monthly, Y = Yearly, Cond. = depend on cleanness condition of pipeline or within 2Y before ILI Pig
- R = Regional Operations, PE= Pipeline engineering division, E = Pipeline maintenance management division, OF = Offshore Operations, Q = PTT Lab, A = Academy division
- EH = Each Hottap, EP = Each Pigging, DCVG,Aging - EA = Each Assessment - Trunk line = Pipeline segment of the transmission system - Branch = Unpiggable Pipeline
- Preserved pipeline= Pipeline temporarily removed from service and reserve to use in the near future. The pipeline must store the gas inside all the time after stop using it .
- Abandoned pipeline = Pipeline permanently removed from service and subject to "an irreversible process of discontinuing the use of a P/L The internal P/L must fill up with concrete material or nitrogen.
- Preserve P/L = Isolated P/L, N2 pack, No Gas inside P/L

Schedule / Form:

1) S-รท.วรค.-01-0002, MAOP revised for PTT network
2) S-รท.วรค.-01-0003, TSO Pipeline Integrity Plan
3) S-รท.วรค.-01-0004, NGR Pipeline Integrity Plan
4) S-รท.วรค.-01-0005, NGV Pipeline Integrity Plan
5) S-รท.วรค.-01-0006, Offshore SIM program
6) S-รท.วรค.-01-0007, Cleaning PIG Instrument PIG Schedule
7) S-รท.วรค.-01-0008, Transmission Pipeline Indirect Inspection
8) S-รท.วรค.-01-0009, Distribution PL Indirect Inspection
9) S-รท.วรค.-01-0010, NGV Pipeline Indirect Inspection
10) S-รท.วรค.-01-0011, Natural Gas Pipeline Inspection & Maintenance Program for GSP
11) S-รท.วรค.-01-0012, Ageing pipeline integrity management
12) S-รท.วรค.-01-0013, Risk-Based Inspection Plan
13) S-รท.วรค.-01-0014, Aerial Patrolling Survey Schedule
14) S-รท.วรค.-01-0015, Corrosion Coupon Inspection Schedule
15) S-รท.วรค.-01-0016, Soil Settlement Inspection Plan
16) S-รท.วรค.-01-0017, Offshore Pipeline ROV survey & Free span correction
17) S-รท.วรค.-01-0018, ICCP Anode Groundbed Replacement Plan
18) S-รท.วรค.-01-0019, Direct Assessment
19) S-รท.วรค.-01-0020, Soil Settlement Repair plan
20) S-รท.วรค.-01-0021 Soil Erosion Repair plan
21) S-รท.วรค.-01-0022, SaleTap and Vent/Drain Pipe Indirect Inspection