

Views/comments on Proposed Amendments in PNGRB T4S NGPL Regulations

S. No	Clause No./ Reference	Description	As proposed by subcommittee	Views/Comment received	Sub-Committee Recommendations
1	Schedule 1A Materials and Equipments - Steel Pipe	as per Line Pipe Specification API 5L, shall be Seamless, Electric Arc Welded (EAW) or Longitudinal / Helical Submerged Arc Welded (LSAW/HSAW) conforming to (PSL 2).	after the words beginning with “as per Line Pipe Specification...” and ending with “...conforming to (PSL 2).”, the following shall be substituted with, namely: - “ as per Line Pipe Specification API 5L, shall be Seamless, High Frequency Welded (HFW) including Electric Resistance Welded pipes or Longitudinal / Helical Submerged Arc Welded (SAWL/SAWH) conforming to (PSL 2) ”	No Comments	No Change
2	Schedule 1D- Pipeline System and Component- Other Requirements	Fire & gas detectors shall be installed in the compressor buildings or compressors skids to initiate shut down of the unit, isolation of the compartment and release of clean agent / CO2 inside the unit in the event of occurrence of fire.	after the words beginning with “Fire & gas detectors shall be installed...” and ending with “...the event of occurrence of fire.”, the following shall be substituted with, namely: - “ Fire & gas detectors or Multi-sensor detectors shall be installed in the compressor buildings or compressors skids to initiate shut down of the unit, isolation of the compartment and release of clean agent / CO2 inside the unit in the event of occurrence of fire. ”	GAIL The term ‘Fire & Gas Detection’ is used to keep provision of different types of detectors having capability to detect fire or leakage of natural gas or both inside compressor enclosure to initiate shutdown of the unit. Accordingly, applicability of ‘Multi-Sensor Detector’ (provision of heat & smoke detection) may be reviewed for Compressor Skid/Enclosure.	No Change
3	Schedule 1D- Pipeline System and Component- Stations Block valves		Below “Table-2” the following “Note” shall be added aligning with ASME 31.8, namely: - “ Note- Based on the above location class, number of Block / Sectionalizing valves to be installed shall be worked out. Valve spacing adjustments should not exceed 10% of the applicable distances listed above to permit a valve to be installed in a more accessible location, with continuous accessibility being the primary consideration. However, the total number of valves as per the design requirement shall remain same. ”	GAIL Note may be modified as below to align it in line with ASME B31.8 (Para 846.1.1): “Note- Block / Sectionalizing valves shall be provided at continuously accessible locations at interval distances mentioned in the table above based on predominant location class along the pipeline. Valve spacing adjustments should not exceed 10% of the applicable distance listed above to permit a valve to be installed in a more accessible location, with continuous accessibility being the primary consideration. However, the total number of valves as per the design requirement shall remain same. ”	Amended as under: “Note- Block / Sectionalizing valves shall be provided at continuously accessible locations at interval distances mentioned in the table above based on predominant location class along the pipeline. Valve spacing adjustments should not exceed 10% of the applicable distance listed above to permit a valve to be installed in a more accessible location, with continuous accessibility being the primary consideration. However, the total number of valves as per the design requirement shall remain same. ”

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4	Schedule 1E-Essential Features of the Emergency Plan	The entity shall put in place an Emergency Response Plan, a Disaster Management Plan and a Pandemic Plan. While preparing these plans the entity shall take into confidence the various local authorities (i.e. The Fire authorities, Police authorities, Health authorities, local administration, Disaster Management authorities, Mutual aid, Factory inspectorate etc) and clearly elaborate on their role in case of an incident.	after the words beginning with “The entity shall put....” and ending with “...case of an incident.”, the following shall be substituted with, namely: “A comprehensive ERDMP shall be developed in accordance to the Petroleum and Natural Gas Regulatory Board (Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP)) Regulations, 2010. The copies of the ERDMP for the pipeline and the station specific shall be maintained at each control room along with necessary maps and records to properly administer the plan, such as i. Necessary operational data ii. Pipeline patrolling records iii. Corrosion monitoring or survey records iv. Leak or tapping records v Routine or unusual inspection records vi. Pipeline repair records”	GAIL Emergency Response Plan is being formulated in accordance with PNGRB (ERDMP) Regulations, 2010. ERDMP itself is a comprehensive regulations, which encompasses information on Risk Assessment, Preparedness, Mitigation, Response & Recovery. It may not be necessary to detail out additional requirements in T4S Regulations w.r.t ERDMP as same are already part of ERDMP and Integrity Management Regulations. Necessary provision may be made in ERDMP Regulations to address such aspects in appropriate Clauses, if any. Hence, the para may be modified as: “A comprehensive ERDMP shall be developed in accordance to the Petroleum and Natural Gas Regulatory Board (Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP)) Regulations, 2010.”	No Change
5	Schedule 1E-Fire and Gas Detection System-Compressor Stations	IR / Smoke detectors shall be provided in control room, MCC, utility room and compressor enclosure with provision of indication, alarm and annunciation.	after the words beginning with “IR / Smoke detectors shall....” and ending with “...alarm and annunciation.”, the following shall be substituted with, namely: - “IR / Smoke detectors or Multi-sensor detectors shall be provided in control room, MCC, utility room and compressor enclosure with provision of indication, alarm and annunciation.”	No Comments	No Change
6	Schedule 1E-Fire and Gas Detection System-Other Gas Installations	IR / Smoke detectors shall be provided in control room, and utility room with provision of indication, alarm and annunciation.	after the words beginning with “IR / Smoke detectors shall....” and ending with “...alarm and annunciation.”, the following shall be substituted with, namely: - “IR / Smoke detectors or Multi-sensor detectors shall be provided in control room, and utility room with provision of indication, alarm and annunciation.”	No Comments	No Change

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7	Schedule 1E-Fire Fighting Equipment	<p>Compressor stations:</p> <p>(a.) Compressor area One (1) number 10kg Dry Chemical Powder (DCP) based One (1) number 6.8 kg CO2 based per two compressors and One (1) number mobile 75 kg DCP based.</p> <p>(b.) Pigging Area, Metering Area and Gas Filtration Area One (1) number 10kg DCP based at each location</p> <p>(c.) Air compressors One (1) number 2 kg CO2 and one number 5 kg DCP based.</p> <p>(d.) Office/ Canteen/ Stores Two (2) number 10kg DCP based in each building.</p> <p>(e.) MCC/DG Room/HT room Two (2) number 4.5 kg CO2 based in each room or per 100 m2 floor area.</p> <p>4 sand buckets with stand shall be provided near to DG room. A trolley containing first aid fire protective accessories shall also be provided</p> <p>Intermediate pigging station</p> <p>One (1) number 75 kg and one (1) 10 Kg DCP based and one (1) number 2 kg CO2 based. 100% spares for CO2 cartridges and 50% spares for DCP cartridges shall be stored</p> <p>Sectionalising Valve stations</p> <p>One (1) number 10 kg DCP based and one (1) number 2 kg CO2 based. 100% spares for CO2 cartridges and 50% spares for DCP cartridges shall be stored</p> <p>Gas receipt / delivery terminals ;</p> <p>One (1) number 75 kg and one (1) 10 kg DCP based and one (1) number 2 kg CO2 based.</p>	<p>As the DCP extinguishers and CO2 extinguishers are manufactured in 9 Kg and 6.5 Kg capacity and the respective IS codes have been revised. It was decided to amend in Schedule 1E, under the heading "Fire Fighting Equipment" as under:</p> <p>Compressor stations:</p> <p>(a.) Compressor area One (1) number 9 kg Dry Chemical Powder (DCP) based One (1) number 6.5 kg CO2 based per two compressors and One (1) number mobile 75 kg DCP based.</p> <p>(b.) Pigging Area, Metering Area and Gas Filtration Area One (1) number 9 kg DCP based at each location</p> <p>(c.) Air compressors One (1) number 2 kg CO2 and one number 5 kg DCP based.</p> <p>(d.) Office/ Canteen/ Stores Two (2) number 9 kg DCP based in each building.</p> <p>(e.) MCC/DG Room/HT room Two (2) number 4.5 kg CO2 based in each room or per 100 m2 floor area.</p> <p>4 sand buckets with stand shall be provided near to DG room. A trolley containing first aid fire protective accessories shall also be provided.</p> <p>Intermediate pigging station:</p> <p>One (1) number 75 kg and one (1) 9 Kg DCP based and one (1) number 2 kg CO2 based. 100% spares for CO2 cartridges and 50% spares for DCP cartridges shall be stored</p> <p>Sectionalising Valve stations:</p> <p>One (1) number 9 kg DCP based and one (1) number 2 kg CO2 based. 100% spares for CO2 cartridges and 50% spares for DCP cartridges shall be stored</p> <p>Gas receipt / delivery terminals:</p> <p>One (1) number 75 kg and one (1) 9 kg DCP based and one (1) number 2 kg CO2 based.</p>	No Comments	No Change

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8	Schedule-1E-Permanent Field Repairs of Injurious Dents and Mechanical Damage-2. Modification on the pipeline system:	The hot tap shall be carried out as per API RP 2201	Continue with current practices.	GAIL a) PNGRB is requested to once again consider the proposal of GAIL dated 28.11.2018 for amendment in T4S Regulations w.r.to Hot Tapping on NG Pipeline. b) Further, in the proposed Annexure-A, the para on "Modification on the pipeline system" may be assigned a separate title number as it does not fit under the heading "Permanent Field Repairs of Injurious Dents and Mechanical Damage".	No Comments
9	Schedule-1G- Annexure II List of Specifications of Piping Materials used in Natural Gas Pipelines- Metering Equipment	Inclusion of OIML R 137- Part 1 & 2 for Gas Ultrasonic Flow meters	Include OIML R 137- Part 1 & 2 along with AGA 9 as metrological standard for Gas Ultrasonic flow meter for metering equipment	GAIL It is understood that for USM based metering systems, new clause in Schedule 1G-Annexure-II: List of for equipment used in natural gas pipeline System- Metering Equipment will be as under: Metering Equipment : • AGA Report No. 3 : Orifice Metering of Natural Gas and Other related Hydrocarbon fluids • AGA Report No. 9 : Measurement of Gas by Multi-path Ultrasonic Meters & Gas Meters and OIML R 137 Part1 & 2 : Part1: Metrological and technical requirements Part2: Metrological controls and performance tests • EN 12480 Gas meters - Rotary displacement gas meters • OIML R32 Rotary piston gas meters and turbine gas meters • AGA Report No. 7 Measurement of Gas by Turbine Meters	No Change

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				<p>• EN 12261 Gas meters - Turbine gas meters</p> <p>Justification: As OIML R 137 Part1 & 2 recommendations apply to gas meters based on any measurement technologies and these recommendations provide the guiding principles common to all type of meters. However there are specific requirement on installation and other parameters which are specifically dealt in AGA-9 which is the reference standard for metering system based on ultrasonic meters. Thus it is understood that the amendment is being proposed to include both the standards i.e. AGA9 & OIML R137 Part1 & 2 for ultrasonic meters.</p>	
10	PNGRB T4S Regulations for NGPL with Clause Numbers	For ease of reference a need was expressed by subcommittee members to provide clause numbers in the regulations	Enclosed as "Annexure-A"	<p><u>GAIL</u></p> <p>It is observed that the amendments notified on 05th January 2018 in NGPL T4S Regulations have not been included in the proposed Annexure-A. The same may be included in the proposed Annexure-A.</p>	It was informed that regulations would be repealed and all the amendments will be incorporated.
11	Schedule-1D- Design, Installation and Testing- Plastic Pipes and Components	Use of MDPE pipeline for transportation of Natural Gas from CBM/ marginal field	<p>To allow use of MDPE pipeline for transportation of Natural Gas in class 1 & 2 locations and accordingly proposed the following amendment:</p> <p>In Schedule ID – Design, Installation and Testing after the sub-heading Plastic Pipes and Components and before the sub-heading LOCATON AND LAYOUT OF PIPELINE INSTALLATIONS –</p> <p>Transportation of Natural Gas in class 1 & 2 locations</p> <p>PE pipes can be laid to transport natural gas including off spec gas etc. provided if meets the following requirements.</p> <p>a. The PE pipeline shall be laid complying with all the provisions of the PNGRB (Technical standards and specifications including safety standards for City or local gas distribution network) Regulations, 2008. These provisions inter alia include odourisation, route markers, warning mat etc.</p> <p>b. Quantitative risk analysis shall be carried out for the pipeline network and risk mitigation measures shall be taken accordingly to minimise the risk.</p> <p>c. The cover of 1.5 meter or the cover as specified in these Regulations for steel pipelines, whichever is higher shall be maintained.</p> <p>d. The pressure shall not exceed 7 Kg/cm² in the PE Pipeline Network.</p>	<p><u>GAIL</u></p> <p>• In Location class 1 & 2 there will be less inhabitation and the pipeline route will also be in remote areas. In view of this the requirement of odourisation in (a) may be removed.</p> <p>Justification: Approx. 25 nos. of MDPE pipelines with length of 40 Km are being operated satisfactorily for more than 15 years in GAIL.</p>	No Change

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			e. The material shall conform to IS 14885 or ISO 4437 or ASTM D2513-14e1. The fittings shall as per ISO 8085 Part 3		
12		Fire Water system at compressor station delivering less than 4 MMSCMD	To continue with current practices.	No Comments	No Change
	Schedule 1E- SAFETY AND FIRE PROTECTION -Gas receipt / delivery terminals Clause 5.10 (D) (3) (iii)	Fire fighting system with fire water network shall be provided for compressor stations.	To delete clause "Firefighting system with fire water network shall be provided at gas compressor stations"	No Comments	No Change

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13	Schedule 1E- SAFETY AND FIRE PROTECTION -Fire Water System Clause 5.11.4 (i)	The Fire water system shall be provided at compressor stations consisting of:	To amend the clause for clarity. Modified Clause: "Firefighting system with fire water network shall be provided at gas compressor stations and shall consist of:"	GAIL This clause specifically addresses the requirement of Fire Water System in Compressor Stations. Other Fire Fighting System/Appliances are detailed out in Clause 5.10.3. Hence the para is proposed to remain same: The Fire Water System shall be provided at Gas Compressor Stations consisting of:	No Change
14	Schedule 1E- SAFETY AND FIRE PROTECTION -Design Flow Rate Clause 5.11.5 (i) & (ii)	The fire water pumping requirement for medium velocity spray shall be calculated based on the spray rate given below or flow through two (2) nos. of fire water monitors (i.e 288 m3/hr) whichever is higher. Spray rate for various areas shall be as follows: (a) Compressor area: 20.4 Lpm/ m2 of area (b) Scraper area / Metering area / filter area: 10.2 Lpm/ m2 of area. (c) Other area: 3 Lpm/m2 of area	To merge the Clause as under: The fire water pumping requirement for medium velocity spray shall be calculated based on the spray rate given below or flow through two (2) nos. of fire water monitors (i.e 288 m3/hr) whichever is higher. Spray rate for various areas shall be as follows: (a) Compressor area: 20.4 Lpm/ m2 of area (b) Scraper area / Metering area / filter area: 10.2 Lpm/ m2 of area. (c) Other area: 3 Lpm/m2 of area	No Comments	No Change
15	Schedule 1E- SAFETY AND FIRE PROTECTION -Design Flow Rate Clause 5.11.5 (iii)	Compressor area, gas after cooler area, pigging area, filtration area, metering area, condensate collection area etc. shall be covered with medium velocity water spray system using monitors and hydrants.	To modify as under:- Gas after cooler area, pigging area, filtration area, metering area, condensate collection area etc. of the Compressor station shall be covered with medium velocity water spray system using monitors and hydrants.	GAIL Monitors and hydrants cannot be named as 'Medium Velocity Water Spray System'. IS 15325 Water Spray System — A special fixed pipe system connected to a reliable source of fire protection water supply and equipped with water spray nozzles for specific water discharge and distribution over the surface or area to be protected. The piping system is connected to the water supply through an automatically actuated deluge valve which initiates flow of water. Automatic actuation is achieved by operation of automatic detecting equipment installed along with water spray nozzles. Accordingly, the para is proposed to modified as: Compressor area, gas after cooler area, pigging area, filtration area, metering area, condensate collection area etc. shall be covered with medium velocity water spray system	Agreed by sub committee To modify as under:- Gas after cooler area, pigging area, filtration area, metering area, condensate collection area etc. of the Compressor station shall be covered with medium velocity water spray system.

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16		Alternate method to Intelligent Pigging	To continue with current practices.	<p><u>GAIL</u></p> <p>PNGRB is requested to once again consider the proposal of GAIL dated 19.07.2016 in this regard, and it would be more appropriate to do in PNGRB IMS Regulations.</p> <p>It may be further deliberated during the Open House.</p>	It will be discussed in IMS NGPL meeting.