



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

OPERATOR:.....

INSPECTION DATE(S):.....

FACILITY(S): .....

No	Prompt	Remarks	Comments /Status
1	<b>Pressure Integrity Management Policy and Strategy</b>		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Tick one (✓)
1.1	<b>Pressure Integrity Management Policy</b>  Does the operator have a written Pressure Integrity Management Policy?  If so, is it clearly defined, communicated & put into practice?	Pressure integrity management policy shall be clear and specific. <ul style="list-style-type: none"> <li>• Should have well defined objectives, performance standards and indicators.</li> <li>• Systems, assets and equipment to be monitored by specific programmes should be clearly identified.</li> <li>• The process of validation &amp; verification should be clearly defined along with regulatory requirements.</li> <li>• The policy should be accessible to all workforce</li> </ul>	
1.2	<b>Plan &amp; Strategy</b>  What are the plans and procedures to achieve the strategies and performance standards of pressure integrity	Key elements are: <ul style="list-style-type: none"> <li>• Scope of pressure equipment shall cover all static pressure equipment, piping including risers, PSV and RV including associated supports and passive fire protection</li> <li>• Standards, specifications and controls for</li> </ul>	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
	Are the following inspection codes & recommended practices referenced? :  AS 3788, API RP 572, 574, 576, 579 and 580 and API 510 and 570	whole life cycle of the pressure equipment <ul style="list-style-type: none"> <li>• Identification of failure &amp; degradation mechanisms.</li> <li>• Risk assessment to establish equipment criticality.</li> <li>• Inspection / maintenance strategies &amp; procedures including acceptance standards.</li> <li>• Inspection / maintenance programme including reporting</li> <li>• Equipment historical records documenting inspection findings &amp; repair and are kept up to date.</li> </ul>	
2	<b>Pressure Integrity Implementation</b>		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Tick one (✓)
2.1	<b>Organisation</b> Have roles / responsibilities for Pressure Integrity been adequately defined including the allocation for onshore & offshore staff?	<ul style="list-style-type: none"> <li>• The roles and responsibilities of <b>all</b> stakeholders in connection with Pressure Integrity management should be clearly identified including those of third parties and contractors.</li> </ul>	
2.2	<b>Asset Integrity Custodian</b> Is there an Asset Integrity Custodian appointed?  Is there a documented	<ul style="list-style-type: none"> <li>• Asset Integrity Custodian is a discipline Engineer, who liaises with operations &amp; inspection team. He/She are members of in-house operation support team.</li> </ul>	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
	<p>procedure for re-rating of pressure equipment?</p>	<ul style="list-style-type: none"> <li>The procedure should clearly mention the process and authority for re-rating of pressure equipment.</li> </ul>	
2.3	<p><b>Person In Charge of repair and maintenance</b></p> <p>Is there a PIC appointed for all repair &amp; maintenance work covering all pressure equipment including piping?</p> <p>Is there a documented procedure for temporary repair of pressure piping?</p>	<p>The PIC for pressure equipment repair should have knowledge of equipment codes and practices and who liaises with all relevant persons and authorities before carrying the repair and maintenance.</p> <p>There should be a temporary repair procedure as part of technical integrity strategy and a register of any such temporary must be kept current.</p>	
2.4	<p><b>Code Compliance</b></p> <p>Is there an established list of codes and standards covering all pressure equipment including piping?</p> <p>Is there an approach established due to updating of international / national codes &amp; standards?</p>	<p>All topsides pressure equipment including piping is designed &amp; fabricated/ tested to international / national codes &amp; standards. These are specified in the facility equipment &amp; piping specifications detailing the functional and technical requirements.</p> <p>The operators are expected to review the implication of changes in design codes if any. Justification for not incorporating changes to be provided.</p>	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
2.5	<p><b>Operating Procedures</b> Are there adequate operating procedures for safe operation within the design envelopes?</p>	<p>The operating procedure should set boundaries for safe operation of all pressure equipment, including system isolation and reinstatement. A procedure should cover temporary excursion of operating boundaries.</p>	
2.6	<p><b>Maintenance Procedures</b> Is there a flange bolt torquing procedure for pressure equipment including piping?</p> <p>Is there an inspection and maintenance programme for threaded connections in pressure system?</p> <p>Is there an inspection procedure or methodology / inspection programme against detecting corrosion under lagging?</p> <p>Is there inspection and maintenance regime covering PSV/RV, rupture disc and other over pressure protection system?</p>	<p>There should be a procedure for torquing bolted flange joints of all sizes and ratings, using simple torquing tools to comprehensive hydraulic tools, including training, competency and safety aspects of performing the work.</p> <p>Programme should set priority for critical areas i.e. vibration and highly stressed areas.</p> <p>Does the scope cover all insulated pressure equipment and piping systems with operating temperature of 65 C or below, which can allow moisture retention? This includes items sitting offline periodically and over a long period of time. Is the inspection on-line or off-line?</p> <p>These are safety critical equipment which should be periodically inspected to comply with company acceptable standards.</p>	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
2.7	<b>Offshore Implementation</b>  Is the Pressure Integrity management strategy effectively enacted offshore?	Aspects for consideration during offshore inspection include; <ul style="list-style-type: none"> <li>• FMT team has an overview of system metallurgy and corrosion / cavitations / fatigue and other degradation risks.</li> <li>• The objective of operation surveillances from Pressure Integrity management perspective is clear.</li> <li>• Reporting of excursions &amp; including vibration, Pressure/ Temperature cycle, RV lifting events are clear.</li> <li>• The distribution of small bore pipe work, reinstatement and the condition monitoring regime.</li> <li>• Established operational procedures for pressurised systems.</li> </ul>	
3	<b>Risk Based Inspection (RBI)</b>		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Tick one (✓)
3.1	<b>Methodology</b>  Does the operator have a risk-based inspection methodology covering pressurised equipment and piping systems?  Are there performance	The process of RBI should be transparent with risks assessment inputs and perspective from a multi-discipline team, and the process should be auditable. Methodology may involve various levels of qualitative and quantitative analysis to establish a risk matrix from transparent threats and failure modes, focussing at system, equipment and equipment components levels.	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
	standards and a set of well defined and measurable KPIs established?	<p>API 580 “Risk-based Inspection” was developed for pressure vessel and piping inspection.</p> <p>AS 3788 “Pressure Equipment” Appendix B “Risk Management” mirroring similar arrangements.</p>	
3.2	<p><b>Training and Competency</b> Is the multi-discipline team to carry out the RBI assessment sufficiently competent in their own discipline and the process? What training has been provided for this purpose?</p>	<p>The RBI team should consist of personnel of specific competency and training should be provided in the RBI process to all team members.</p>	
3.3	<p><b>Annual or Risk Based Inspection</b> Are all parts of the topsides pressure equipment &amp; piping system rigorously inspected annually? If not, how is the integrity assured?</p> <p>Is there a feedback process to adjust follow up inspection tasks, methods and</p>	<p>If a documented risk based approach is implemented there is a need to work within the confine of codes and standards.</p> <p>Inspection plan could be developed as a rolling programme.</p>	



**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
	frequency?		
3.4	<b>Verification of RBI</b> What verification methodology does the operator employ for such RBI decisions and assurance of system effectiveness?	Typically, the operator engages an independent verification body to audit the system of work with clear defined terms of reference.  RBI methodology is a smart system & will need comprehensive verification.	
<b>4</b>	<b>Performance &amp; Reporting</b>		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Tick one (✓)
4.1	<b>Performance Monitoring</b>  How is performance monitored against predetermined criteria?	Some of the proactive monitoring measures include; <ul style="list-style-type: none"> <li>• Process condition monitoring.</li> <li>• Operating condition against an established integrity envelope.</li> <li>• Monitoring of excursions &amp; pressure cycles.</li> <li>• Monitoring of lifting of relief valves.</li> <li>• Monitoring of loss of containment and incident rates.</li> <li>• Examination of the status of equipment.</li> <li>• Checks on protective coatings / condition under insulation.</li> <li>• Operator routine checks covering surveillance of unusual noise, movement and / or vibration.</li> </ul>	




**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

No	Prompt	Remarks	Comments /Status
4.2	<b>Fit For service criteria</b> Is “fit for service” criteria established for all pressure equipment & piping systems?	AS3788 & API 579-1/ASME FFS-1 are acceptable (governed by facility Safety Case).	
4.3	<b>Audit and Review</b> What arrangements are in place to review the Pressure Integrity management system?	Review and audits should include evaluation of : <ul style="list-style-type: none"> <li>• the effectiveness of existing equipment inspection and monitoring regime.</li> <li>• policy compliance.</li> </ul>	
4.4	<b>Validation &amp; verification</b> Within the framework of Facility Integrity Management System, is there a pressure equipment validation process linked to performance standards?  For significant repair and alteration to safety critical pressure equipment, is an independent verification body involved?	Validation by operator on a predefined frequency using base line data & inspection data & Operating condition, changes in operating conditions etc.  This is self-prescribed by the operator, and the accepted Safety Case in force governs this.	


Legend:




**FACILITY INTEGRITY  
TOPSIDES PRESSURE INTEGRITY MANAGEMENT**

 - Complies

 - partially complies (incomplete system)

 - non compliance (major failing – key elements missing)

 - Not Tested / No evidence

**(Please send the completed prompt sheets to T3 EA with 3 good practices and 3 practices with deficiencies/major failures)**

**INSPECTION CARRIED OUT BY**

**Name:** ..... **Signature:** .....