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	<b>SYSTEM PROCEDURES MANUAL</b>	<b>QMS-01</b>	
	Department/ Process Owner	Effective Date	
	<b>PNOC QMS TEAM</b>	<b>September 30, 2020</b>	
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## 1.0 Objective

- 1.1 To provide guidelines and methods for identifying opportunities and risks associated with change and development
- 1.2 To apply appropriate risk-based approach in the management of changes in systems, processes, infrastructure and equipment, projects, and activities

## 2.0 Scope

This document contains guidelines and methods that can be used for the following:

- 2.1 Planning of new processes, products, services, or projects;
- 2.2 Change management, including those brought about by corrective action, improvement, and management decisions.

## 3.0 References

ISO 9001:2015 Quality Management System (Clause 6 Planning)

## 4.0 Definition of Terms and Abbreviations

- 4.1 FMEA – Failure Mode and Effect Analysis; the tool used by PNOC in identifying risks (failure modes and effects) in its processes and operations, planning for actions to address them, and identify additional control measures or opportunities for improvement
- 4.2 PPA – Potential Problem Analysis
- 4.3 Risk – effect of uncertainty; the combination of the likelihood of occurrence of a hazardous event (or environmental aspect) or exposure and the severity of injury or ill-health that can be caused by the event or exposure
- 4.4 Risk assessment – process of evaluating the risk arising from a hazard, taking into account the adequacy of any existing control, and deciding whether or not the risk is acceptable
- 4.5 SWOT – Strengths, weaknesses, opportunities and threats
- 4.6 PESTLE - Political, Economic, Social, Technological, Legal and Environmental

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## 5.0 Policies and Guidelines

### 5.1 QMS Planning - Failure Mode and Effect Analysis (FMEA)

- 5.1.1 Each department, division, office or functional unit shall use QMS-01F1 FMEA Risk Register template to identify:
- 5.1.1.1 Failure modes and effects (risks) – what could go wrong and their effects on QMS/ IMS
  - 5.1.1.2 Current control and detection measures
  - 5.1.1.3 Contingency measures
  - 5.1.1.4 Risk priority number (RPN) – calculated as probability X Severity X Control and detection
- 5.1.2 If the RPN is 100 and higher, it is required to identify additional control measures (ACM)
- 5.1.3 If RPN is lower than 100, ACM may still be proposed as improvement opportunities
- 5.1.4 The effectiveness of ACM shall be measured or evaluated after at least three months of implementation or before the internal audit. This will give way to the calculation of the residual RPN.
- 5.1.5 New ACM may be proposed if the residual RPN is still high.

### 5.2 Management of change

- 5.2.1 New projects/ processes, including corrective actions shall undergo risk assessment process before implementation if they identify new or modified processes, new and modified controls.
- 5.2.2 Various methods may be used for the risk assessment of changes and developments. These are:
- 5.2.2.1 Risk Assessment Checklist for Management of Change
  - 5.2.2.2 SWOT and PESTLE Analysis
  - 5.2.2.3 PPA

## 6.0 Details

### 6.1 Build a team

- 6.1.1 Designate at least one person to champion a particular activity.
- 6.1.2 Depending on the size and complexity of the activity or project, member(s) may need to be defined.

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6.1.3 Define the responsibilities of each member.

6.2 Define the project and its details

- 6.2.1 End goals and specific objectives
- 6.2.2 Activity details
- 6.2.3 Timeframe
- 6.2.4 Resources needed
- 6.2.5 Other important information

6.3 Conduct risk assessment. This could involve brainstorming and discussions, which may use any of the following methods:

- 6.3.1 SWOT and PESTLE
- 6.3.2 PPA
- 6.3.3 Cause and effect
- 6.3.4 Advantage/ disadvantages

6.4 For opportunities and benefits, propose measures of how these could be explored and maximized.

6.5 For risk and threats, propose measures how these could be prevented, controlled, or mitigated.

6.6 Controls may need to be applied during the introduction of change. During the "implementation" stage, relevant documents may need to be created or revised.

6.7 Action plans to manage change may be any one or combination of the following. Determine who are going to be in charge, when and how these could be done:

- 6.7.1 Purchasing of materials, equipment, or services
- 6.7.2 Training of relevant personnel
- 6.7.3 Creation or revision of documents
- 6.7.4 Installation of equipment
- 6.7.5 Acquisition of permits and licenses

6.8 If applicable, include action plans in the Office Performance Commitment Report (OPCR).

6.9 Monitor the introduction or implementation of the project/ change. Determine if modification in the approach would be necessary.

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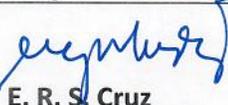
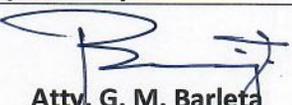
## 7.0 Records/ Files Generated

QMS-01F1 FMEA Risk Register  
 QMS-01F2 Risk Assessment Checklist for Management of Change  
 QMS-01F3 Potential Problem Analysis (PPA)  
 QMS-01F4 Strength, Weaknesses and Threat (SWOT) Analysis  
 QMS-01F5 Political, Economic, Social, Technological, Legal, Environmental (PESTLE) Analysis  
 QMS-01F6 Action Plan

## 8.0 Attachments

QMS-01-A1 FMEA Score Guide  
 Sample forms

Rev. No.	Affected pages/ section	Revision History
0	-	New version of PNOC QMS; to include PNOC Energy Supply Base and PNOC Industrial Park.

Prepared by	Reviewed by	Approved by
 Atty. E/A. Legaspi Department Manager- Asset Management Department	 E. R. S. Cruz Department Manager - Internal Audit Office	 Atty. G. M. Barleta SVP for Energy Business



**FMEA Score Guide**

Score	Probability	Severity of consequences	Control Measure and Detection	% Effectiveness of additional control measure/ Risk Reduction	
1	Extremely unlikely	Insignificant	Effective control and detection	0.1	90% Effective Reduction of the risk
2				0.2	80% Effective Reduction of the risk
3				0.3	70% Effective Reduction of the risk
4				0.4	60% Effective Reduction of the risk
5				0.5	50% Effective Reduction of the risk
6	Likely	Significant	Needs improvement	0.6	40% Effective Reduction of the risk
7				0.7	30% Effective Reduction of the risk
8				0.8	20% Effective Reduction of the risk
9				0.9	10% Effective Reduction of the risk
10	Certain/ inevitable	Catastrophic	No existing control or detection	1	No risk reduction, Crisis response only

Scoring based on the scales above should be based on current conditions, resources, and other prevailing factors.

The scores will be applied on the shaded columns P, S, and C on the FMEA Tab.

Identify additional control measures (ACM) if the RPN is more than 100.

Rate the effectiveness of the ACM after implementation. Assess if the risk has been prevented through these ACM.

If RPN is 100 and below, no ACM needed, unless improvement is desired.

Review and update this Risk Register/ FMEA at least once a year, or in case of changes.



Failure Mode and Effect Analysis (FMEA) Risk Register  
QMS-01F1 Rev.0

Department:  
Function:

Date:

Ref. No.	Process	Risk (Failure Mode or Potential Problem)	P	Effect	S	Current Control and Detection Measures	Contingency Measure/Correction	C	RPN (PxSxC)	Opportunity Additional control measure	E	RPNxE
			Probability		Severity			Control and Detection			Effectiveness of PA and CM	
1									0			0
2									0			0
3									0			0
4									0			0
5									0			0
6									0			0
7									0			0
8									0			0
9									0			0
10									0			0
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12									0			0
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17									0			0
18									0			0
19									0			0
20									0			0



**CHANGE MANAGEMENT CHECKLIST**

<b>Proponent:</b>		<b>Date:</b>
<b>Project Team/ Contractor:</b>		<b>Ref. No.</b>
<b>Location/ Area:</b>		
<b>Description of Project/ Change:</b>		
<b>Identification of Associated Risks and Opportunities</b>		
<i>Note: Use this form for the planning and introduction phase. Use FMEA form for the operational/ implementation phase.</i>		
<b>Issues/ Factors/ Interested Parties</b>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<b>Opportunity</b>	<b>Risk</b>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<b>Action Plans for Change Management</b>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		
<b>QMS Documentation</b> – Based on this risk assessment, review and update the following (Attach DCR and draft document) :		
<input type="checkbox"/> QMS Policy	<input type="checkbox"/> Procedure(s) Indicate title:	
<input type="checkbox"/> QMS Policy Manual	<input type="checkbox"/> Form(s):	
<b>Prepared by:</b>	<b>Reviewed by:</b>	<b>Approved by:</b>
<b>Project Proponent</b>	<b>Project Leader</b>	<b>Department Manager</b>



**POTENTIAL PROBLEM ANALYSIS**

<b>Project Name:</b>	<b>Date:</b>
<b>Contractor:</b>	<b>Ref. No.</b>
<b>Location/ Area:</b>	
<b>Description of Change:</b>	

Task/ Process	Potential Problem	Probability	Severity	Risk (PxS)	Preventive Action	Detection/ Indicator	Contingency Measure

<b>Prepared by:</b>	<b>Reviewed by:</b>	<b>Approved by:</b>
<b>Project Proponent</b>	<b>Division Chief</b>	<b>Department Manager</b>



**SWOT ANALYSIS**

<b>Project Name:</b>	<b>Date:</b>
<b>Contractor:</b>	<b>Ref. No.</b>
<b>Location/ Area:</b>	
<b>Description of Change:</b>	

Strength	Weakness	Opportunities	Threats

Action Plans:

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<b>Prepared by:</b>  <b>Project Proponent</b>	<b>Reviewed by:</b>  <b>Division Chief</b>	<b>Approved by:</b>  <b>Department Manager</b>
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**PESTLE ANALYSIS**

<b>Project Name:</b>	<b>Date:</b>
<b>Contractor:</b>	<b>Ref. No.</b>
<b>Location/ Area:</b>	
<b>Description of Change:</b>	

Political	Economic	Social	Technological	Legal	Environmental

Action Plans:

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<b>Prepared by:</b>  <b>Project Proponent</b>	<b>Reviewed by:</b>  <b>Division Chief</b>	<b>Approved by:</b>  <b>Department Manager</b>
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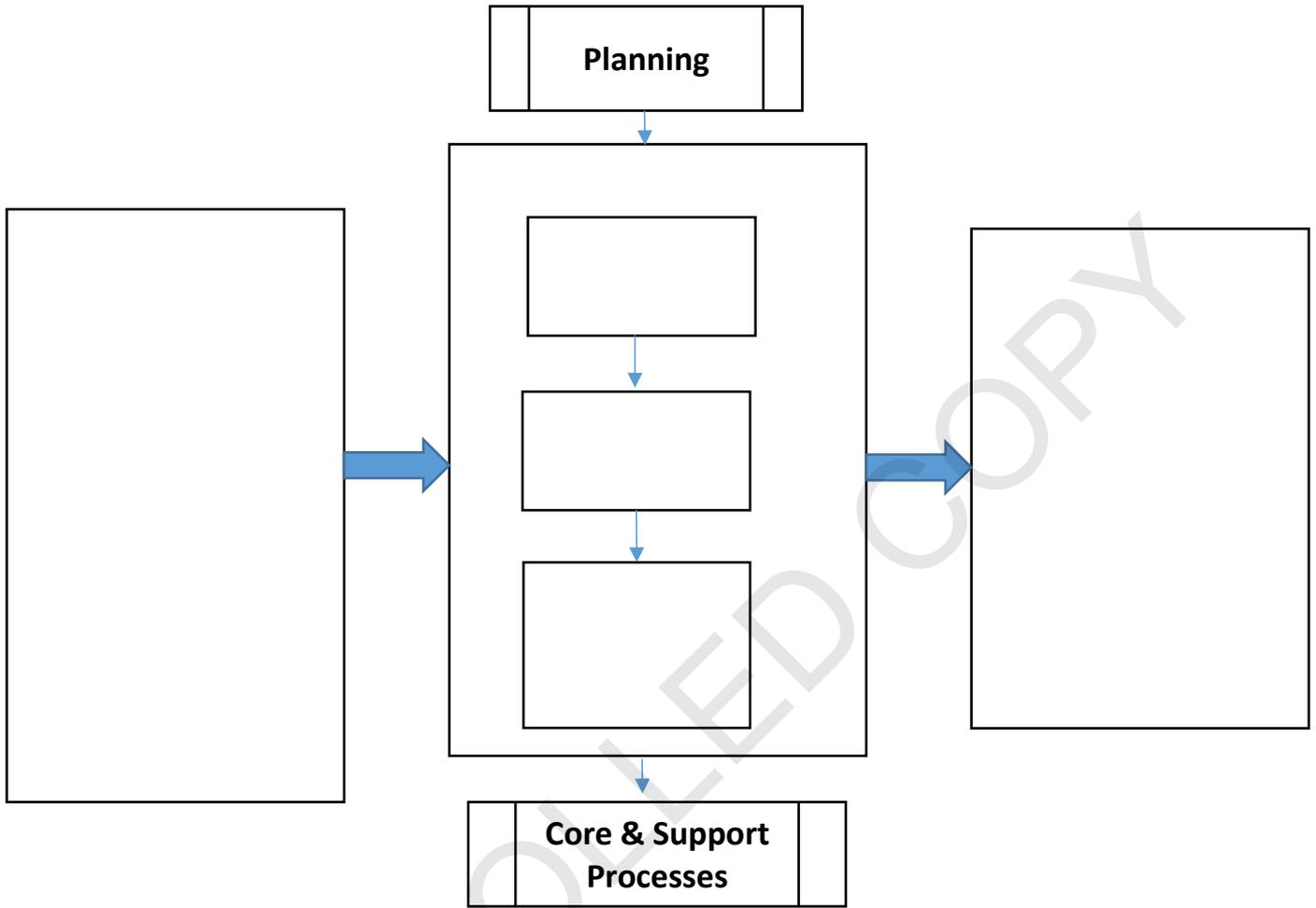
**ACTION PLAN**

QMS- 01F6

Action	Responsible (Leader and Members)	Time Frame	Remarks

Prepared by:	Reviewed by:	Approved by:
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**Context Diagram**



[Narrative]

Rev. No.	Affected pages/section	Revision History
0	-	New document

Prepared by	Reviewed by	Approved by
Process Owner	Department Manager	SVP MS