Key Components of a Project Quality Plan

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Abstract

On any project, one of the crucial components of a success is by implementing a well-defined and progressively developed Quality Plan tailor made for the project. The project quality plan is developed with the aim of guiding the project team in oversight activities to minimize the Company's risk. The Quality Plan describes the Project Quality Management System to be applied by the Project Team (PT) to meet the project's quality objectives, It establishes the hierarchy and relationships of this PQP to the Engineering Procurement Contractor's (EPC) and Suppliers' Quality Plans with adequate supporting documentation which defines PT's role in ensuring Quality requirements are effectively communicated and implemented.PT oversight activities defined in the Quality Plan focus on the adequacy of work processes prior to the start of work and compliance with the work processes during development of the product. Every organization and each an every individual performing project work is responsible for the quality of specific work. However, independent oversight is required to verify the compliance of work products and effectiveness, which should be mandatory with compliance of work processes. Criticality of work products and activities is the primary factor in determining the level of Quality Management Program application including the level of oversight applied. Project Quality expectations must be established at primitive stage by communicating constantly and reinforcing regularly.

Keywords: Quality Plan, Project Quality Management System, Project Organization, Project Team, Quality Audit Plan and Inspection & test plan (ITP).

1.0 Project Quality Plan (PQP)

Quality metrics are generated by company or client to assess the performance and provide a basis for improvement to get an oversight of the contractors. There are several components that make up the Project Quality Plan. Below are the major components/sections of a typical PQP which is developed by an International Oil Company (IOC) or client.

1. Quality Objectives and Principles
2. Project Quality Management System, Interfaces & Controls
3. Organizational Structure, Roles & Responsibilities
4. Audits, Assessments, and Reviews
5. Engineering Quality
6. Procurement Quality
7. Logistics Quality
8. Construction Quality
9. Systems Completions
10. Management of Change and Design Control
11. Non-Conformance Control and Corrective Actions
12. Quality Documents, Data and Records
13. Training / Orientation / Handover
14. Quality Reporting and Metrics

15. Regulatory Requirements
16. Lessons Learned / Continuous Improvement

Each of these sections contains plans and procedures which help the various groups to manage and oversee their contractors to ensure compliance to specified requirements. We have used four levels of the criteria from more Important (4) to less Important (1) which are collected from various senior project team, Project Engineers and Quality inspectors and metrics are shown in Figure 1 for the PQP Criteria survey and its study.

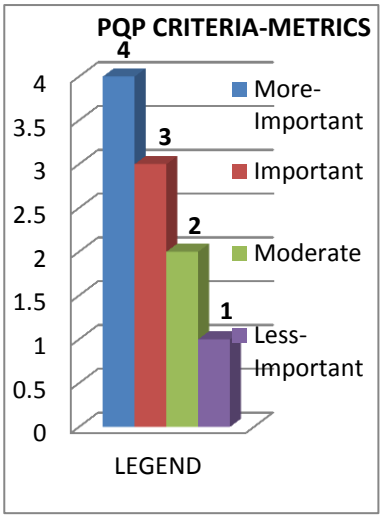

Figure 1: PQP Criteria Metrics

1.1 Additional Project Quality Plan (APQP)

During the survey, few of our Project Engineers and Quality Inspectors have added additional project Quality plan metrics which are reflected in the survey forms and also recommended as more important level (4) for PQP. Following are the list of additional Project Quality Plan (APQP) for further consideration during the analysis of our survey and reported.

- It is essential to have all deliverables at an approved status prior to commencing that activity, (e.g. WPS, hydro test procedure) Weekly QA/QC meeting to monitor the overall project quality level
- List of Applicable specific procedure
- Applicable Quality forms (checklists) / Templates to be approved
- Inspection Test Plan (ITP) & Quality Plan
- Qualified & Experience personal working with project team / Site team (Interview personnel prior to accepting them
- Ensure the Quality Organization addresses the proper positions for the task, (i.e., PQM, Procurement Quality, Site quality…)
- Environmental Impact Study & Awareness
- Hard Penalty / Safety Rolls & Implementation – to be available
- E - Documents / Information Management / Remote control operation.

1.1.1 Project Quality Plan – Survey Form

In order to gain a reasonable opinion from the various project team members, survey form was issued with sixteen PQP structures and provision is given based on the priority ranging from Higher-level to lower-level, Viz. (more important, Important, Moderate and Less important level). Meantime, additional proposed PQP are also provided as part of the survey form wherein, we have gained ten additional PQP criteria which are referred in section 1.1 APQP.

2.0 PQP Structure

Figures 2 including Project Quality Plan Structure and its criteria score, chart images and survey trend are visually represented on the bar chart. Figure 3 is showing the additional project Quality plan along with criteria score and its chart image and survey trend proofed that only more important level (4) is considered by a group of project team members.

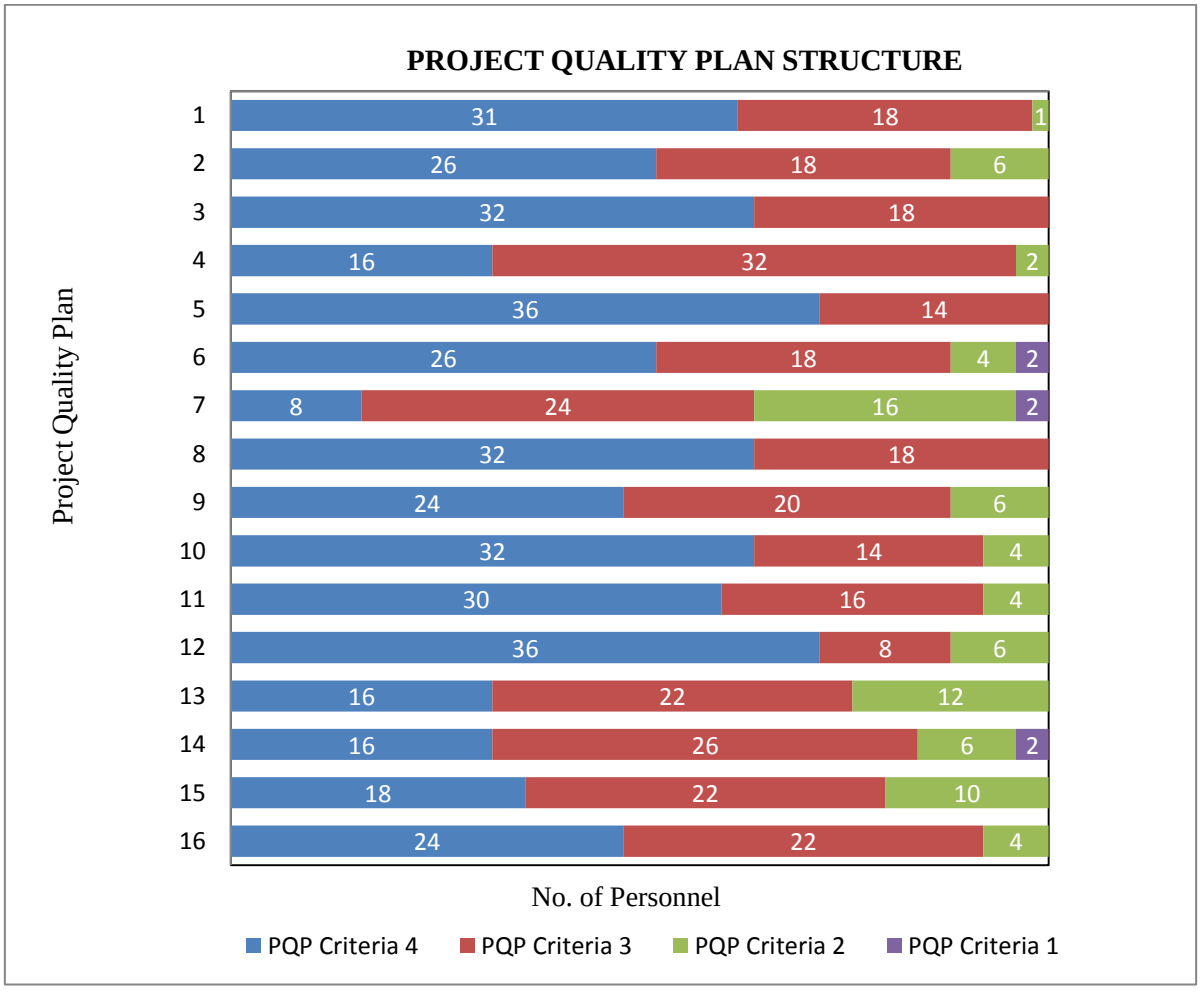

Figure 2: Project Quality Plan Structure and Criteria Score

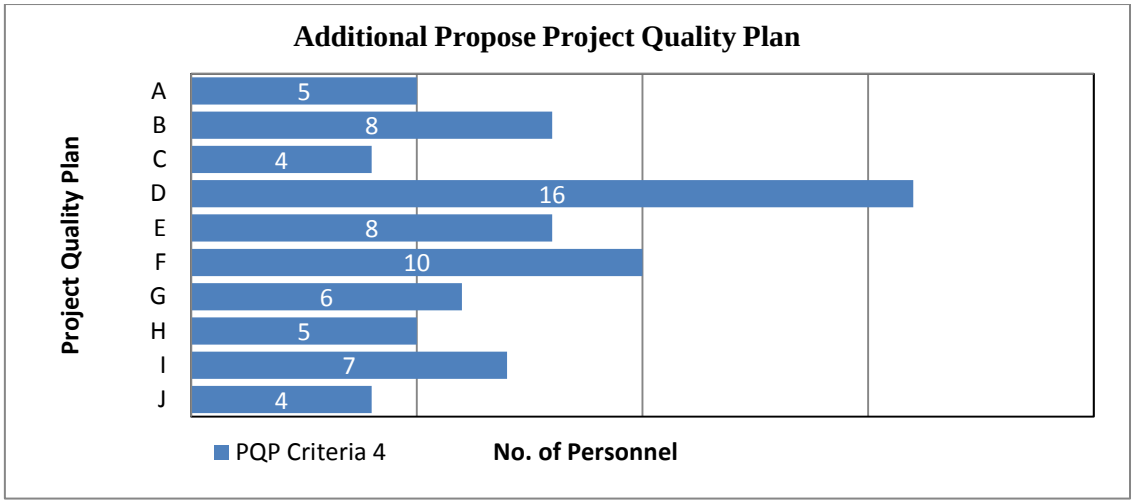

Figure 3: Additional Project Quality Plan Structure and Criteria Score

All additionally proposed PQP structure and its criteria scores are recommended only with more important (4) rather than other levels.

3.0 PQP Criteria and Its Scores

Tables 1 and 2 clearly reflect the PQP criteria scores and APQP scores respectively. All the data and values are carefully collected and computed as proximate as possible, where they are described. All tables should have a descriptive structure and criteria obtained from the survey and collected information's are shown in Table 1 and Table 2.

NO	PROJECT QUALITY PLAN (PQP) STRUCTURE	PQP CRITERIA			
		4	3	2	1
1	Quality Objectives and Principles	31	18	01	00
2	Project Quality Management System, Interfaces and Controls	26	18	06	00
3	Organizational Structure, Roles and Responsibilities	32	18	00	00
4	Audits, Assessments, and reviews	16	32	02	00
5	Engineering Quality	36	14	00	00
6	Procurement Quality	26	18	04	02
7	Logistics Quality	08	24	16	02
8	Construction Quality	32	18	00	00
9	Systems Completions	24	20	06	00
10	Management of Change and Design Control	32	14	04	00
11	Non-Conformance Control and Corrective Actions	30	16	04	00
12	Quality Documents, Data and Records	36	08	06	00
13	Training / Orientation / Handover	16	22	12	00
14	Quality Reporting and Metrics (KPI)	16	26	06	02
15	Regulatory Requirements	18	22	10	00
16	Lessons Learned / Continuous Improvement	24	22	04	00

Table 1: Project Quality Plan Structure and Criteria Scores

NO	ADDITIONAL PROJECT QUALITY PLAN STRUCTURE	PQP CRITERIA			
		4	3	2	1
A	Contractor has to submit all test Documents before construction	05	00	00	00
B	Weekly QA/QC meeting to discover the overall project quality level	08	00	00	00
C	List of Applicable specific procedure	04	00	00	00
D	Applicable Quality forms / Template need to be approved	16	00	00	00
E	Inspection Test Plan (ITP) & Quality Plan	08	00	00	00
F	Qualified & Experience personal working with project team / Site team	10	00	00	00
G	Ensure the Organization of Quality for each part has the right persons.	06	00	00	00
H	Environmental Impact Study & Awareness	05	00	00	00
I	Hard Penalty / Safety Rolls & Implementation – to be available	07	00	00	00
J	E - Documents / Information Management / Remote control operation	04	00	00	00

Table 2: Additional Project Quality Plan Structure and Criteria Scores

4.0 Quality Terminology Guidelines & Abbreviations

Figure 4: Quality Objective & principle distribution shown in the pie chart below. More important criteria have scored 62% against less important criteria which has just scored 0%.

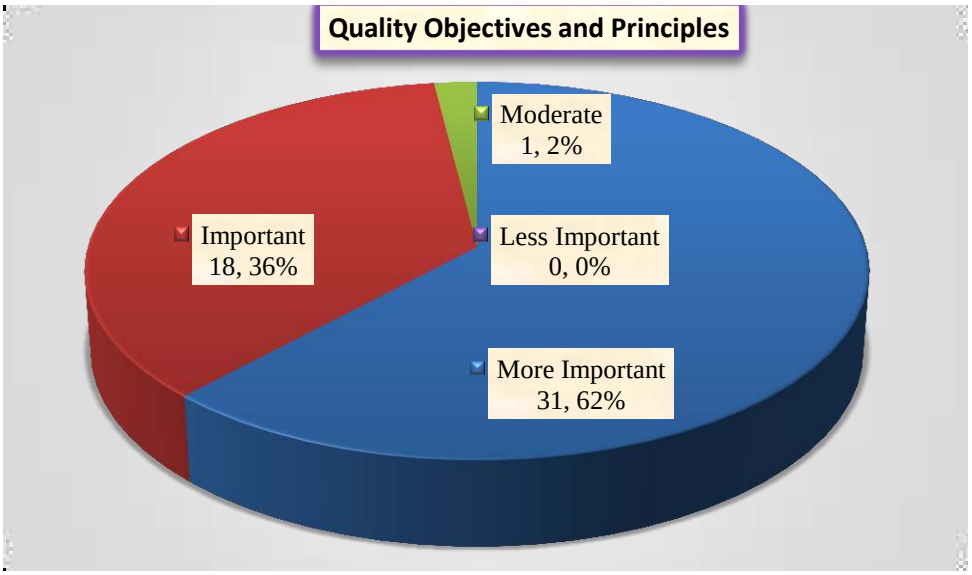

Figure 4: Quality Objective and Principles Distribution

Figure 5: Procurement Quality distribution shown in the pie chart below. More important criteria have scored 52% against less important criteria which has just scored 4%.

Figure 6: Non-Conformance & Corrective Actions distribution shown in the pie chart below. More important criteria have scored 60% against less important criteria which has just scored 0%.

Figure 7: Training/Orientation/Handover distribution shown in the pie chart below. More important criteria have scored 62% against less important criteria which has just scored 0%.

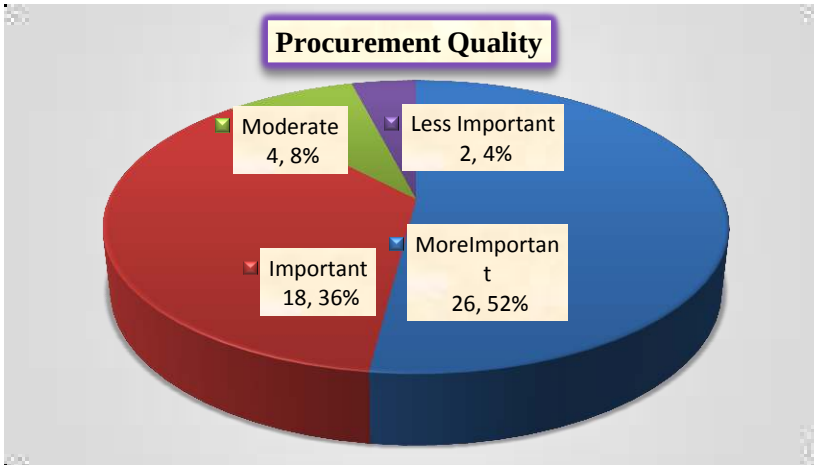

Figure 5: Procurement Quality Distribution

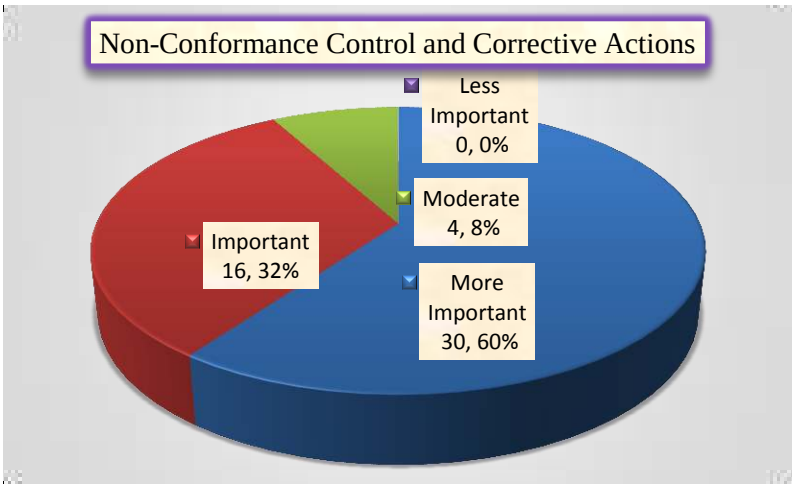

Figure 6: Non-Conformance Control & Corrective Action Distribution

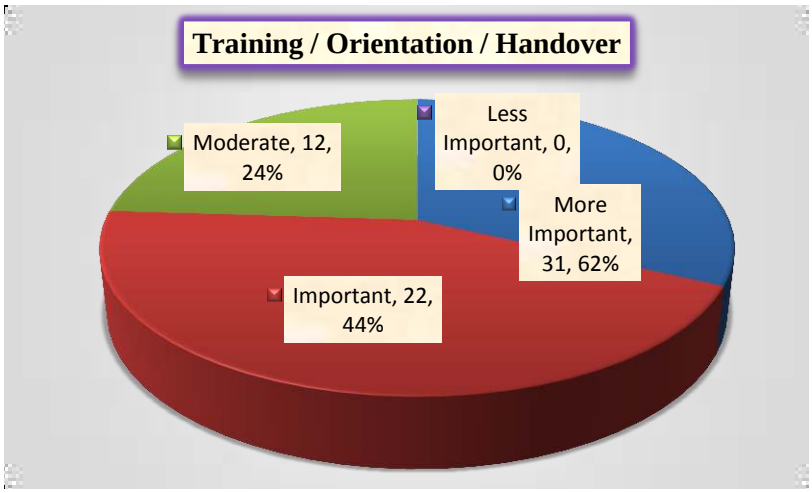

Figure 7: Training / Orientation / Handover Distribution

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I would like to acknowledge the support of the project team and colleagues, especially Novriandi who gave me generous contribution to fulfil this survey successfully. My privileged thanks to line manger VIRGIN Santiago A, who encouraged me to pursue this topic and for reviewing it with time, helping me to achieve a clearer structure of this survey successfully. My sincere thanks extended to Pradeesh, IT Analyst who initiated graphical chart and compilation of the datum.

6.0 Conclusions

Based on the above survey, analysis of the data and its investigation are established as follows,

Project Quality plan structures and its priority of the contents are well recognised and thoroughly evaluated with the impact of recent changes in the industrial expectations. Meantime an additional proposed project Quality plan structures are also judged for a significant improvement on this study. Project Quality plan structure and its captions are assessed neither by descending nor ascending order.

All datum are leading to make the customers/clients more gratified, if they see that the project quality plan is being addressed at the intial stage of a project. It can even be a good project report exercise, to bring them to a quality review process for a continual improvement [kaizen].

These studies were carried out generally in primitive areas of concern conducted by clients previous implementation strategy to minimize these risks, criticality rating, readiness review and more focus on competency skills, better reviews and alignment upfront before the work begins.

Finally, we are still exploring un-assessed and uncovered quality concerns which are challenging milestone to achieve a suitable mechanism to shot these problems in point-blank range. There should be a definite follow up process to deal with strategic approach to allocate and fix. A group of expertise in quality team should review and ensure significant changes which will help us to determine the outcome of an experiment with in-depth knowledge in an industrial arena which could raise the benchmark.

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