

## CHAPTER 9

### 'CHECK' AND 'ACT' PHASES – CONTINUAL IMPROVEMENT

9-1. General. Continual improvement is a performance imperative for every command and is achieved through the review of project results, identification of non-conformities and systemic problems, tools for root cause analysis, and implementation of appropriate corrective actions. The process of continual quality improvement leads to the refinement of the overall quality system. Processes and tools for continual improvement include quality management review, after action review, lessons learned, best practices, and quality metrics.

9-2. Quality Management Review. The relevant QMS will stipulate procedures for management review of production processes at project and organization levels.

9-3. After Action Review (AAR). An AAR is a professional discussion of an event focused on improving the performance of the organization or team. The focus of the AAR is analyzing what was supposed to happen, what actually happened, and why it happened. Through the AAR process, the team compares the actual outcome with the expected outcome of a program, project, event, activity or service, identifies gaps and corrective actions, and develops lessons learned. The AAR process is described in HQDA Training Circular 25-20, *A Leader's Guide to After-Action Reviews*.

a. Each PDT will conduct an AAR at the end of each major project phase.

(1) For Civil Works projects, an AAR should be conducted when these phases/events are completed: reconnaissance; planning; PED; and construction; one year after turnover; and every third year during O&M.

(2) For Military projects, an AAR should be performed when these phases/events are completed: planning charrette; design; construction; and the nine-month post-completion inspection.

(3) For HTRW projects, an AAR should be performed when these phases/events are completed: reconnaissance; feasibility, construction; and other major milestones associated with the program type.

(4) For all projects, an AAR should be performed when:

(a) An error or other significant change causes one or more of these conditions to occur: a cost increase of 5% or more; a design schedule slippage of 30 days or more; a construction time growth of 60 days or more; and/or a consequent reduction in project quality.

(b) An innovation has resulted in a significant project success.

b. After Action Reviews will be scheduled and budgeted for in the Project Management Plan. The PDT will determine the most efficient manner to accomplish the AAR.

- c. AARs may be formal or informal, depending on the nature of the activity being assessed. All AARs will be documented in the project record. Lessons learned and best practices from the AAR will be documented and shared regionally.
- d. Customers and stakeholders, including contractors, will be offered the opportunity to participate in each AAR. AAR results will be shared with customers.
- e. The District Project Review Board (PRB) will provide oversight of the AAR results.

9-4. Lessons Learned. In accordance with Change Management PROC3010 and Activity/Project/Program Closeout PROC4000, ER 5-1-11 requires the PDT to capture Lessons Learned (LL) associated with project changes and whenever projects and/or phases of projects are completed. Lessons Learned PROC3020 establishes a general process for the PDT to capture project-related LL. Districts will develop detailed formal LL procedures within their QMS. The PDT will enter project LL into the ProjNet<sup>sm</sup> module Design Quality Lessons Learned (DQLL<sup>sm</sup>) or an alternate system for Corps-wide review. At project initiation, each PDT will review LL repositories for information pertinent to the project. The Regional Headquarters will ensure that Districts have and are using LL systems and are effectively capturing and sharing LL internally and with other Districts.

9-5. Best Practices. A Best Practice is a process, technique, or innovative use of technology, equipment or resources that has a proven record of success in providing significant improvement in cost, schedule, quality, performance, safety, environment or other measurable factors which impact an organization. Identifying and sharing best practices is another effective method for improving processes, products and customer satisfaction. The District should implement a procedure to identify, document and share best practices. The Regional Headquarters will identify best practices during District quality visits and communicate them across the region.

9-6. Quality Metrics. The District will develop metrics to measure and track progress with established quality objectives. Examples of metrics include, but are not limited to:

- a. Customer Satisfaction.
- b. Customer, End User, and Construction Contractor Surveys.
- c. Controllable Cost Growth during construction.
- d. Comparison of the Fair and Reasonable Estimate vs. the Baseline Estimate.
- e. Low Three (3) Bids on Construction Contracts.
- f. VE Composite.
- g. Total Labor Multipliers (TLM).
- h. Chargeability for Civil Design.

- i. S&A Rate.
- j. A-E Appraisals both before and after construction.
- k. Construction Contractor Appraisals.
- l. Cost Estimate and schedule changes during project development.
- m. Number of Scope revisions.
- n. Number of significant PDT, ITR and BCOE comments.
- o. Number of significant Bidder Inquiries during advertisement.
- p. Number of significant Contractor RFIs during construction.
- q. Number of designer site visits requested during construction.
- r. AARs completed for the project.
- s. Number of Lessons Learned generated by the project.
- t. Number of amendments during solicitation.

9-7. Process Improvements. Each QMS will prescribe procedures to measure conformity and conduct analyses that will lead to continual improvement. AARs, LL, and customer satisfaction surveys will be among the methods used to identify needs for corrective actions and process improvements. To select process improvements USACE organizations should consider such factors as:

- a. Control. Will the improvement provide better control to ensure the project meets customer expectations?
- b. Sustainability. Will the improvement provide better project results in a cost efficient way, over time and as conditions change?

c. Reliability. Will the improvement produce the intended results for all quality factors (e.g. better, cheaper, and faster) without lowering the quality of any single factor?

d. Feasibility. Is the improvement change for the sake of change, or will it provide real positive results? Will the improvement optimize performance at a cost acceptable to quality and the organization?

9 Appendices  
(See Table of Contents)