

The Audit Score



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The numerical scores used to grade PCI Plant Certification audits occasionally raise questions from participants. This paper clarifies the significance of the numerical scores and will hopefully eliminate misunderstandings about them.

Auditors award an audit score of 85 for an item when the plant meets requirements stated in the applicable PCI Quality Control Manual. A higher score indicates that the procedures or efforts taking place at the plant are better than expected. A lower score means criteria are not being met and some improvement is in order. A failing score is defined as a score less than 70.0 in any of the seven divisions or a score less than 80.0 for the weighted average of all seven divisions. The audit score is a rating on a scale of 0 to 100—not a percentage. The use of 85 as the nominal score is arbitrary. This score implies that, although additional measures could be performed, the plant's quality system is satisfying the requirements set forth by the Quality Control Manual and, in turn, the requirements of PCI.

Some plants have tried to attach more significance to their audit score than it is intended to convey. Management at one plant hastened to attribute a low score on a recent audit to an erosion of its entire quality program. That is probably an overreaction. There are other situations where plant management has tied the numerical score to compensation of plant and quality management personnel. Using the numerical scores in these ways may not be entirely appropriate. The remainder of this paper discusses why.

PCI's auditing organization currently maintains a large staff qualified to perform plant audits. Each staff member is a graduate engineer, most have years of relevant experience, and many are registered professional engineers. Before they perform audits independently, auditors are required to complete technical training in precast concrete construction and the requirements of the PCI Quality Control Manuals, in addition to instruction in principles of quality, quality assurance, quality control, and auditing procedures. They accompany an experienced auditor, usually a principal in the firm, on a series of audits for on-the-job training.

Every attempt is made to ensure that the audit and the numerical score are as objective as possible. This objectivity is the underlying reason for having only one firm perform all of the PCI Plant Certification audits. Back at the auditors' office, each audit report is reviewed for objectivity, accuracy, and thoroughness by a second auditor before it is released.

Given this extraordinary focus on consistency, why must the audit score be used with caution? The answer is that the PCI Plant Certification auditor is only in each plant a few days each year. Even though auditors are thoroughly trained to perform their reviews, it is unlikely the current auditor will observe the same production in the same stage of completion, under the same conditions as the previous auditor. Of course, plant processes, personnel, and equipment can also change from one audit to the next.

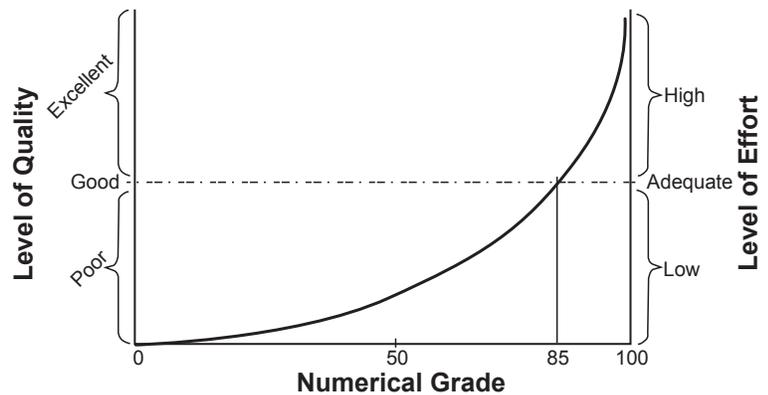
Consider these facts: A prestressed concrete plant encompasses an enormous number of manufacturing suboperations. The product mix is constantly changing. The weather is certainly inconsistent. The level of manufacturing activity fluctuates with construction cycles, and it normally involves personnel layoffs or, sometimes, the need for temporary help. Equipment sometimes malfunctions, and new processes are tried. New equipment is purchased, and new employees are trained. The complexity of projects in production changes frequently. Despite these factors, a plant-controlled environment provides many benefits. Even so, plant operations inevitably change from visit to visit.

So, what can the audit score really mean to the participating plant? The absolute value of the plant's weighted average score is only relevant **as an indication** of the plant's performance and how thoroughly the plant's quality system addresses all of the many facets of quality management. Reviewing the scores of the individual divisions can provide insight into areas or operations where improvement might be needed.

The audit score can also be a warning. If the overall score trend is decreasing and approaching 80.0, it should be a warning that there is a danger of the audit scores slipping below passing. A review of the cause or causes for the trend should be conducted, and appropriate corrective actions initiated. If wide fluctuations in audit scores are encountered, this may indicate that the plant's quality program is inconsistently applied.

Representatives of some plants ask how their plant might attain a score of 100. Philosophically, 100 is approachable but unattainable. It is assumed that no process is perfect. Illustration 1 depicts this concept graphically. Furthermore, implementing a higher level of procedures or efforts may not be practical or economical.

If the numerical score is of limited significance, where is the real value in the audit report? The value of the report lies in the observations made and recorded during the audits. Audits are not conducted to recognize praiseworthy accomplishments of the plant. Unfortunately, time does not permit that. Instead, audits are meant to confirm that the plant is conforming to program requirements. While verifying conformance, the auditor will often uncover inconsistencies and deficiencies—however small—that may be affecting quality. The audit report and its findings should be viewed as a tool for management to evaluate and improve quality—that is the true value of PCI Plant Certification!



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