



Risk Tip 10 – Essential Benefits of Project Peer Review *Provided as a courtesy by the ACEC/MA Risk Management Forum* **July 2014**

Whether issuing a study, report or doing full engineering design services, peer review of the project deliverable is a critical quality control step toward a successful outcome. Whether internal or external, a peer review can catch errors and/or omissions before they become serious problems. If done at intervals during the course of the project, the peer review can go a long way to keeping the project within budget and avoiding costly surprises. Also a peer reviewer might be able to provide additional advice that could be useful in improving the work. If an issue or claim later should occur, a proper peer review will serve as a solid defense that the engineering team acted reasonably and prudently in accordance with the standard of care.

Clients in both the public and private sectors have become more educated over the years with regard to cost recovery. In an effort to avoid cost overruns, clients look closely at the source and cost of change orders. Many public agencies follow an approach where each change order, regardless of cost is assigned, at a minimum, to one of three categories – client ordered changes to the project; unforeseen conditions and changes allegedly due to errors and omissions. It is not unusual for the agency to pursue recovery if changes due to alleged errors and omissions exceed a range of 3 to 5% of the original bid construction cost. Thus performing a peer review goes a long way to minimizing exposure to client claims.

The level of peer review can vary by project size and type. Peer review procedures are sometimes also mandated by contract. Firms seeking an ISO Certification must demonstrate an effective quality control program that includes peer review. This risk tip is not intended to review peer review procedures in detail, but rather to provide some general thoughts as to what should be part of a peer review process.

The reviewer should be someone who was not involved in a material way with the design or study. It is always difficult to critique one's own work or to do a detailed review of something you think is already perfect. The peer reviewer should be a senior level person designated by the company as a lead in a specific discipline, who has the relevant experience and background in the type of services being performed for the project. For example, a senior peer reviewer with an electrical engineering background would likely not be a good choice to review structural designs.

The intent of the peer review is checking the deliverable, including related calculations and project scope requirements, to identify any errors or omissions that need to be corrected prior to submission. More importantly, the peer review should help minimize future exposure that could result in claims. When preparing design documents, a good practice might be to conduct an initial peer review when designs and drawings are at a 15 to 30% level of completion. At this phase, both the conceptual and preliminary designs are complete. Also at this level, sizing of equipment has taken place and the process to follow has been set. Errors and/or omissions caught at this level, usually are easy to correct, without much impact to the project budget. If there isn't a peer review at this level, you risk finding a problem

much later in the design or construction, which will be far more costly to fix. Additional reviews up to the 95% level of completeness should be performed. Each deliverable regardless of what it is should be reviewed before release. Whatever it may be, if it is going out to the client or others, it needs to be reviewed.

The firm's internal peer review process should be detailed in the QA/QC procedures. It is important to follow the firm's peer review process as failure to do so will likely get you into trouble. The failure to show compliance with the company's QA/QC procedures will certainly be used against the firm in any claim brought by a client or others who may have suffered a loss on the project.

The peer review on any project should be well documented. There should be a checklist in the file showing who reviewed the work, what the review involved, when the review was performed and the findings of the reviewer. Document all responses to any recommendations or findings. If the team is considering various design options or recommendations, there should be detailed documentation as to why the option chosen was considered best by the design team. It is also helpful to note why each of the other options was not selected.

The design team also should give consideration as to whether prior drafts are to be kept after the peer review has been completed. Unless the drafts are considered public records, such as in some environmental work, or the contract requires that prior drafts be kept, it is better to discard the old drafts in favor of the final drafts.

Whenever you retain sub-consultants on the team, it is important that their work is also peer reviewed. Errors and/or omissions by the subs will take down the whole team. Seek the sub-consultant's plan for quality control that needs to include peer review. Either the sub needs to have a plan in place or adapt to the prime's plan. Even if the contract may not require an external peer review, you may want to consider such, particularly if the sub-consultant's work forms a critical piece of the project and your firm lacks the expertise to do a proper review.

This ACEC/MA Risk Tip is intended to provide current and accurate information to assist the reader in becoming more familiar with the subject matter. It is informational only and not intended to substitute for technical, legal, or risk management professional advice. The reader is encouraged to consult with an attorney or appropriate professional consultant to explore this information further.

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