

In the first issue of each year we thank the volunteers who are responsible for maintaining the integrity and quality of the peer-reviewed papers published in *PCI Journal*. Many active members of PCI participate in this vital service to the industry, but the process itself may be something of a mystery to the average reader.

PCI Journal receives manuscripts from authors all over the world for possible publication. When they first arrive, the editor-in-chief performs a preliminary screening to determine what the paper is about, whether it is appropriate for publication in PCI Journal, and who might be a good reviewer for it. Some of the manuscripts we receive are blatantly commercial, lack sufficient technical "meat" for our readers, or have no relevance to precast/prestressed concrete. In such cases, the editor-in-chief conveys to the author what would be needed to make the manuscript acceptable for peer review or recommends other publications more appropriate to the subject matter.

## Selecting the reviewers

If the manuscript passes this initial screening, the editor-in-chief selects six potential reviewers who are knowledgeable about the subject matter. These individuals may be among the authors of the references cited in the manuscript. Usually they are members of relevant PCI or ACI committees. Often authors of recently submitted manuscripts on closely related topics will be asked to serve as reviewers. For academic research papers, the potential reviewers would mostly be other academics or design professionals who have PhDs, that is, people who understand how to conduct and report on research. For practical papers describing how to design something or how something was constructed, the reviewers would mostly be consultants, state bridge engineers, or plant personnel. However, the choice of reviewers reflects our readership. Engineering research ultimately should be implemented, and the people who implement it are not usually academics. For this reason, some reviewers of academic research papers will be practitioners who can evaluate how it might be used.

To avoid conflict of interest, anyone known to be closely related to the authors, such as a colleague or a recent graduate from the same university, would not be selected. Potential reviewers who have a conflict of interest unknown to the editor-in-chief should recuse themselves. *PCI Journal* maintains a database of manuscripts, and we check the database so as not to send a manuscript to anyone who has been asked to provide a review within the past few months to avoid burdening anyone unduly.

Each potential reviewer receives a copy of the manuscript and a review form to fill out. There are yes-or-no questions such as, "Is this paper likely to be of interest to a significant number of *PCI Journal* readers?" and "Are the conclusions well substantiated in the body of the paper?" Reviewers are asked to rate the paper on a scale of 1 (strongly recommend rejection) to 5 (strongly recommend acceptance). They are then asked to provide their comments. Most reviewers are remarkably conscientious, providing detailed comments that reflect a good deal of thought, time, and care. If a reviewer rates the manuscript at 1 or 2, comments are mandatory. Both the editor-in-chief and the authors need to know in detail why a manuscript is recommended for rejection or revision. We ask reviewers not to focus on the quality of the writing but to concentrate on the technical merits. Most reviewers, however, provide both technical and editorial comments. Reviewers are anonymous to the authors and to one another.

When we send out the manuscript for review, we ask reviewers to respond within six weeks. After four weeks, we send a reminder if they haven't either returned a review or declined to review the manuscript. The editor-in-chief checks the manuscript database weekly. If it appears that not enough reviews are likely to come from the original six potential reviewers, more are added as needed.

## The decision

Once a manuscript has received three reviews, the editor-in-chief evaluates them. Ideally, all three reviewers rate the manuscript favorably and it is accepted. More often, the reviewers are divided, some rating it highly and some having serious reservations about it. It is important to understand that peer review is not a vote. One reviewer's compelling reason for rejecting a manuscript may outweigh any number of favorable reviews. The editor-in-chief carefully evaluates the comments to see what the specific concerns are and whether it might be possible to address them. For example, if the conclusions are not well supported by the data presented, it may be possible to rewrite the conclusions or delete some of them. If the authors have failed to cite or adequately discuss relevant publications, they could revise their introduction and modify their discussion and conclusions accordingly. On the other hand, if there are not enough data to support any conclusions, publication would be premature. Allegations of plagiarism or of simultaneous submission of the same manuscript to another journal are thoroughly investigated. In some cases, other PCI staff members or contractors may be asked to comment on a manuscript.

The editor-in-chief notifies the authors of the results of peer review as soon as they are available. Notification of acceptance includes a tentative assignment of the manuscript to a specific issue of *PCI Journal*. Otherwise, authors may be given the option of revising and resubmitting their manuscript. If so, they will receive anonymous copies of all of the reviews and will be asked to address the substantive comments in their revision. The revised manuscript and the authors' summary of how they addressed each comment are forwarded to each reviewer who expressed substantive concerns about the original manuscript. Each reviewer is asked to verify that his or her own comments have been adequately addressed. Once all of the reviewers have done so, the authors are notified of acceptance or rejection of the revised manuscript. The authors may disagree with certain reviewers' comments; if so, they may decline to do as requested and provide an explanation. Authors get at most one chance to revise a manuscript for re-review.

Peer review can take less than a month or longer than six months, depending on how quickly the reviewers respond and how many times additional reviewers must be sought. Overall, well-written manuscripts of high technical quality take relatively little time, either for the individual reviewer or for the process as a whole. Poorly written manuscripts take longer. However, if they have sufficient technical merit we may want to accept them and edit as necessary. Manuscripts of dubious technical merit or little relevance to the industry should be rejected, but reviewers are often reluctant to do so, instead spending hours delineating the changes that would be necessary to make them acceptable.

## The last step

The process of peer review does not end with publication. Anonymous prepublication review is complemented by open discussion by the wider readership of the published paper. Anyone who reads the paper is welcome to ask questions or comment on its merits. We forward all reader discussion to the authors for response and publish discussion and response together. The names of all discussers are published with their comments.

Prepublication peer review has numerous deficiencies. It can be painfully slow. It depends on anonymous reviewers to act with integrity, objectively evaluating the merits of the work or recusing themselves if they cannot do so. Peer review is not designed to catch fraud or plagiarism; such a small group of reviewers cannot be expected to detect either one consistently. Even knowledgeable reviewers may not recognize conclusions that are not well supported by the data presented, references that have been misquoted or misconstrued, or poorly designed or executed experimental procedures. This is why if even one reviewer finds such a defect in a paper, it will not be accepted regardless of how highly the other reviewers rated it. Depending on the nature of the defects, the authors may have the opportunity to revise the manuscript and submit it for a second review. Open discussion of published papers by the whole readership helps compensate for these shortcomings. Flaws that were not apparent to any of the three reviewers may be plain to one of the hundreds of readers.

The reviewers for PCI Journal thus take on a big responsibility. They spend hours on top of their regular jobs evaluating in detail the merits of the manuscripts we send them, giving all of us the benefit of their specialized expertise. Our heartfelt thanks to everyone who did so in 2013.

Sergio Alcocer Lawrence Kahn Neal Anderson Bijan Khaleghi Sameh Badie Andy Ko Loei Badreddine Kosal Krishnan Michael W. LaNier Brahim Benmokrane Peter Bilberg John S. Lawler Jared Brewe Donald Logan

Claus Brix José Rocio Martí-Vargas

Joanne Browning Ed McDougle Matt Carlton Donald Meinheit Reid Castrodale Alexander G. Mihaylov Vijay Chandra Antoine Naaman Ned M. Cleland Frank Nadeau William Cook Adam Neville William Cox Pinar Okumus C. Kennan Crane Michael Oliva Tom D'Arcy Chris Pantelides Anil Patnaik David Deitz Geert de Schutter Conrad Paulson Scott Phelan Charles Dolan Jeff Dragovich Chuck Prussack Ashish Dubey Basile Rabbat

Ahmed ElRemaily Mary Lou Ralls Newman

Al Ericson Julio Ramírez Jim Fabinski William Ray Amir Fam José Restrepo Chiara Ferraris Sami H. Rizkalla

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Benjamin Graybeal Carol Shield Micah Hale Johan Silfwerbrand

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Wael Zatar Mohsen Issa