GUEST EDITOR'S COMMENTS

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This issue presents the first set of a series of papers on fusion neutronics integral experiments and analyses. The rest of the papers will appear in the next issue. The papers report on the final results from the experiments and analyses conducted over a 10-year period under the Japan Atomic Energy Research Institute (JAERI)/United States collaborative program on fusion neutronics. The objectives of the collaborative program have been (a) to establish new experimental techniques for performing fusion neutronics integral experiments; (b) to provide experimental data for evaluating the accuracies of basic nuclear data and calculational methods for fusion system design; (c) to provide estimates of uncertainties in the calculation of tritium breeding, nuclear heating, and induced radioactivity and decay heat; (d) to provide feedback for future nuclear data measurements and evaluations and calculational method improvements; and (e) to provide guidelines for fusion system designers, particularly the magnitude of safety factors required to compensate for quantified uncertainties.

The papers presented here describe more than 20 integral experiments that were conducted and analyzed in the course of the JAERI/United States collaborative program. They represent the largest investment made to date in the field of fusion neutronics. The experimental data and the comprehensive analyses reported here represent a wealth of information for further analysis, interpretation, and utilization by fusion researchers and designers.

My sincere thanks and appreciation to the authors, with all of whom I had the pleasure of working during this collaborative program. I also would like to thank the many reviewers who generously contributed their time and technical advice. The support of the JAERI management and the Office of Fusion Energy (OFE) in the U.S. Department of Energy made the collaborative program possible. On behalf of the U.S. authors, I would like to express special thanks to Mr. Sam Berk from OFE for continued support, encouragement, and many helpful suggestions. I would like also to thank Ms. Rachel Holmes, who coordinated many of the administrative aspects of preparing and reviewing the papers.