Foreword

As machinery engineers with many decades of applicable experience, we have observed plant startup and commissioning routines that ranged from deeply flawed and disappointing, to superb and pacesetting. We have come to know that a smooth startup requires planning and management commitment. That said, process machinery commissioning and startup involve well-structured precursor events that represent essential asset management activities. Collectively, motivation, commitment and expert implementation form a bridge from inanimate engineering plans to a construction site and, ultimately, a properly staffed and trained workforce in an exemplary plant. With sound leadership at the helm, sets of drawings are turned into a valuable facility with a happy and competent workforce. Its staffers are value-adders; they operate a safe and highly profitable plant.

Of course, enterprise requirements for capital project execution have evolved. The result is: a significant portfolio of project execution strategies, supplier surveillance, scheduling tools, staffing plans and key performance indicators are used for tracking progress. Together, they include well-defined practices for the development of "Lessons Learned." These valuable lessons are then incorporated into the operating companies' design practices. Others are woven into experience-backed and well-founded exceptions or additions (read "Upgrades") to industry standards of practice.

Understandably, facilities differ, as do management styles. You may not feel comfortable handing this text to novices and instructing them to just follow the book. So then, on the people side of the equation, project team members will include staffers from the engineering, operating, maintenance and enterprise management teams throughout the project's duration, for example, from the pre-front-end engineering and design phase to successful early operation. Success will result if training is carefully executed by subject matter experts. It stands to reason that machinery reliability training includes the designated operation and maintenance teams that will soon be tasked with custody and care of the new assets.

It has been shown that all of these activities result in lower project capital expense, lower asset operating expense, shorter commissioning and start-up schedule and a shorter time to safe and full production. Experience shows that by application of these methods and by using the "tools" they will find in this book, readers and stakeholders can expect longer run-times between turnarounds (i.e., planned shutdowns for maintenance and repair). Moreover, higher asset reliability and production capacity are virtually guaranteed if the reader follows this roadmap. Readers who absorb and then carry out our guidelines will find surprising details in the text that follows.