

**CONSENSUS ON
PRE-COMMISSIONING STAGES
FOR COGENERATION AND
COMBINED CYCLE POWER PLANTS**

AN ASME RESEARCH REPORT

Prepared by the
Combined Cycle Task Group
For the Water Technology Subcommittee of
the ASME Research and Technology
Committee On Water and Steam in Thermal
Systems

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□ FOREWORD □

The Water Technology Subcommittee of the ASME Research and Technology Committee on Water and Steam in Thermal Systems has established a Consensus on Pre-commissioning Stages of Cogeneration and Combined Cycle Power plants.

This publication is an important adjunct to several previously published documents prepared to inform, educate and assist the reader in adequately considering and planning for the many major activities involved in the design, construction and start-up of cogeneration and combined cycle power plants. Experience has shown that failure to consider the complex interrelationships between the various component systems can result in costly delays in project completion and turn over dates. Additionally, incorrect procedures and planning can result in damage or failure of key pieces of equipment or systems during subsequent operation.

This consensus was prepared by a task group of this subcommittee under the leadership of Edward Beardwood. The task group consisted of representatives of manufacturers, operators and consultants involved with the planning, design, manufacture, operation and monitoring of industrial and utility boilers, steam generators and associated equipment and systems.

The ASME Research and Technology Committee on Water and Steam in Thermal Systems will review, revise and reissue this document from time to time as necessary to comply with advances in technology in the design of these plants and the water treatment options.

Roger W. Light

Chair, ASME Research and Technology
Committee on Water and Steam in
Thermal Systems

□ ACKNOWLEDGEMENTS □

This document was prepared by the Pre-commissioning Task Group of the Research and Technology Committee on Water and Steam in Thermal Systems of the American Society of Mechanical Engineers. Recognition is given to the following members of these groups for their contributions in the preparation of this document.

Edward Beardwood, Chair

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This document is dedicated to the late Michael Rootham, a valued member of the ASME Water Technology Subcommittee and contributor to this consensus. His friendship, humor, wit, intellect, and courage will never be forgotten.

This document is intended to serve as a guide for planning for engineering, operations, maintenance, construction, and commissioning personnel designing and commissioning cogeneration and combined cycle power plants. It has been developed by the committee based on best practices and lessons learned from numerous experiences with the design, construction, commissioning, and operation of these types of plants. This document, however, is not a replacement for and does not supersede the procedures and recommendations of the original equipment manufacturers (OEMs) or the commissioning contractor. All procedures and requirements of the OEMs and the commissioning contractor must be adhered to in order to ensure validity of system equipment warranties.

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□ PREFACE □

The ASME Research and Technology Committee on Water and Steam in Thermal Systems previously published a “Consensus on Operating Practices for the Control of Feedwater and Boiler Water Chemistry in Modern Industrial Boilers”, ASME Publication CRTD – 34. That document has been widely applied worldwide by designers and operators of boilers and steam generators. It is used to establish critical monitoring and control parameters and normal operating limits that will minimize deposits and corrosion in the boiler and subsequent steam driven equipment.

The use and adoption of that document encouraged the Research Committee to undertake publication of the following documents that have proven to be of great assistance to industry.

- Consensus on Operating Practices for Control of Water and Steam Chemistry in Combined Cycle and Cogeneration Plants – ASME 859988
- A Practical guide to Avoiding Steam Purity Problems in the Industrial Plant – CRTD Vol. 35
- Consensus on Operating Practices for the Sampling and Monitoring of Feedwater and Boiler Water Chemistry in Modern Industrial Boilers – CRTD Vol. 81
- Consensus for the Lay-up of Boilers, Turbines, Turbine Condensers and Auxiliary Equipment – CRTD Vol. 66

The ASME Research and Technology Committee on Water and Steam in Thermal Systems has prepared this document to assist the industry in improving pre-commissioning practices for combined cycle power plants. This document is a consensus developed by the Pre-Commissioning Task Group, with input from manufacturers, engineering companies, and owners of combined cycle power plants.

Based on the committee members’ experiences with delays in completion, start-up, and operation of new plants, it was concluded that publication of a document on pre-commissioning would be of interest and value. The committee is pleased to provide this compilation of best practice recommendations based on member’s observations and experience.

This consensus is the minimum recommended practice. All requirements found within this document are to be fully monitored and recorded.

