

PREFACE

PLANT WATER CHEMISTRY

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Under the sponsorship of the Power Division, it was my privilege to organize and chair the session on Plant Water Chemistry,^a held at the 1977 Annual Meeting of the American Nuclear Society in New York on June 14, 1977. The topic of Plant Water Chemistry was selected because of its current and long-term significance to the safe and economic operation of water reactor power plants.

Considerable operating plant water chemistry experience has been accumulated over the past several years, and several concerns have been identified. Each invited speaker was asked to address a specific concern.

For example, steam generator tubing corrosion has been an item of concern at several operating pressurized water reactors (PWRs). Malinowski and Fletcher (p. 103) present an update of the chemistry and operational experience with Westinghouse steam

generators, including a discussion of the most current corrosion phenomenon of "denting."

PWRs have experienced increases in soluble radioactivity concentrations within the reactor coolant during refueling shutdowns. Kormuth (p. 99) describes a method of hydrogen peroxide addition used to control the dissolution of ⁵⁸Co and hence the movement of soluble radioactivity through the system.

In a boiling water reactor (BWR), the oxygenated coolant presents a unique corrosion environment requiring careful selection and control of materials and coolant chemistry. Pearl et al. (p. 94) present the results of a program to quantify oxygen and hydrogen peroxide concentrations during steady-state and transient conditions in operating BWRs. Miller (p. 111) discusses BWR water chemistry variations during transients.

In summary, the authors have made a timely and valuable contribution to the state-of-the-art on primary and secondary coolant chemistry. Their efforts in preparing and presenting the papers and those of the Editor of *Nuclear Technology* in publishing the session presentations are greatly appreciated.

^aA similarly titled session was presented at the 1975 Annual Winter Meeting of the American Nuclear Society and published in *Nuclear Technology*, May 1976.