

N42. Update On Primary Chemistry Guidelines For PWRs

A committee of utility and vendor specialists is currently revising the EPRI primary water chemistry guidelines, taking account of the latest data. The committee has developed a set of principles which, when applied in decreasing order of priority, allow a utility to define an appropriate strategy for each plant. This principle takes precedence over the second, which is to reduce lithium to 2.2 ppm as soon as possible or carry out a plant-specific review of the impact of elevated lithium on alloy 600 and Zircaloy components. This principle can be used to permit plants shown to not have susceptible alloy 600 components (for instance, plants with once-through steam generators or alloy 690 or 800 tubing) to continue operation with elevated lithium.

The third principle is to maintain 2.2 ppm lithium until a selected pH between 6.9 and 7.4 is achieved. This pH, chosen after consideration of the plant-specific material and radiation field history of the plant, will be maintained until the end of the cycle. Plants with severe incidence of PWSCC may well decide to select a pH of 6.9 in view of the lack of data on the effect of lithium on crack growth plants. The majority of other plants are likely to choose a higher pH. The precise definition of the principles will be finalized after an industry review takes place later this year.

For more, see C. Wood, "Approaching Consensus on the Optimum pH for PWRs," Nuclear Engineering International, p. 28, August 1990.