

Basis

The simplest and most reliable method of ensuring that ALARA release limits are accomplishing their objective of minimal facility-caused radiation exposure to the general public is to actually measure the integrated radiation exposure in the environment on and off the site.

3.8 Primary Coolant Conditions

Applicability

This specification applies to the quality of the primary coolant in contact with the fuel cladding.

Objectives

The objectives are (1) to minimize the possibility for corrosion of the cladding on the fuel elements, and (2) to minimize neutron activation of dissolved materials.

Specifications

1. Conductivity of the bulk pool water shall be no higher than 5×10^{-6} mhos/cm for a period not to exceed two weeks.
2. The pH of the bulk pool water shall be between 5.5 and 8.0 for a period not to exceed two weeks.

Bases

A small rate of corrosion continuously occurs in a water-metal system. In order to limit this rate, and thereby extend the longevity and integrity of the fuel cladding, a water cleanup system is required. Experience with water quality control at many reactor facilities has shown that maintenance within the specified limits provides acceptable control.

By limiting the concentrations of dissolved materials in the water, the radioactivity of neutron activation products is limited. This is consistent with the ALARA principle, and tends to decrease the inventory of radionuclides in the entire coolant system, which will decrease personnel exposures during maintenance and operations.

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to be changed