19

14th Informal Meeting on Reactor Noise

St. Englmar - April 28-30, 1981

Mitzel, F.
Väth, W.
Ansari, S.

Kernforschungszentrum Karlsruhe GmbH
Weberstr. 5
Postfach 3640 73285256
7500 Karlsruhe

Analysis of Reactivity Noise Measured at KNK II with Respect to Vibrations of Control Rods and Primary Loop Components

Various facts indicated that peaks in the APSD of the neutron flux may be due to vibrations of core components. Possible candidates are the control rods. In order to scrutinize this hypothesis seismic transducers were mounted on the shrouds of the control rod drive mechanisms of each control rod. Correlation measurements between the signals of these transducers and the neutron flux showed positive results. However from measurements with particular control rods being withdrawn from the core (at zero power) and from a quantitative analysis of all experimental results it must be concluded that control rod vibrations do not cause the reactivity noise. Correlations with other signals showed that one peak of the APSD of the neutron flux is probably caused by flow induced vibrations occuring in only one of the two primary coolant loops. A possible explanation of the mechanism which causes the reactivity effect will be given.