

# NEUTRON SURVEY METER USING PRESCILA PROBE

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## **Abstract:**

This paper presents the design and validation of a neutron survey meter. The meter consists of a PRESCILA neutron probe (with good sensitivity, directional response, gamma rejection, and enhanced high-energy response to 20 MeV) and an electrometer which was manufactured by Non-Destructive Evaluation center. The homogeneity response of the PRESCILA neutron probe was investigated as a function of distances from the  $^{241}\text{Am} - ^9\text{Be}$  source in order to obtain the appropriate distance for accurate count-rate measurements using the neutron survey meter. A system consists of the PRESCILA neutron probe and the Ludlum Model 2326 electrometer was then used for measuring neutron dose equivalent rates in the range from 50 cm to 200 cm with the step of 25 cm. The relationship between the count-rate and neutron dose equivalent rates (in the distance ranged from 50 to 200 cm) were deduced to validate the proper operation of the neutron survey meter.

**Keywords:** *Neutron survey meter, PRESCILA neutron probe, Ludlum electrometer.*