

# Manning Uses Nuclear Energy to Improve Plant Production

Reduction of off-spec and reject material has been realized by the John A. Manning Paper Company, Inc., Troy, New York, through use of AccuRay beta gauges, according to Charles E. Lanyon, Research Director.

Long a leader in producing rope content papers for industrial uses, Manning installed its first AccuRay beta gauge in 1951 in keeping with its policy of constantly striving to improve quality control with modern instrumentation. The AccuRay gauge, developed by Industrial Nucleonics Corporation, Columbus, Ohio, was installed between the dryer and calendering stack of a combination fourdrinier and cylinder machine producing a sheet 90 inches in width, with weights ranging from 35 to 300 pounds per 2880 ft.2 ream. A combination range switching and selective model, the AccuRay is calibrated in three ranges in pounds per ream: 0-200, 100-300, and 200-400.

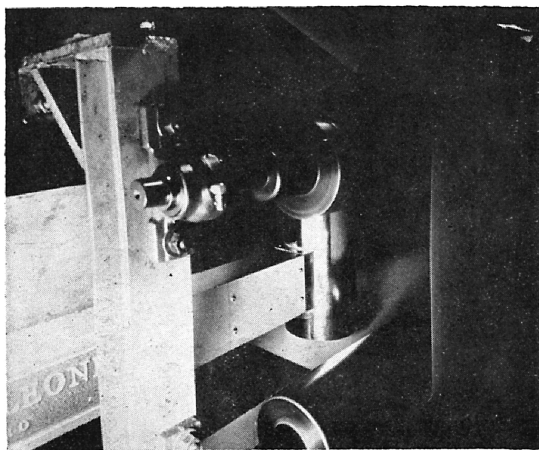
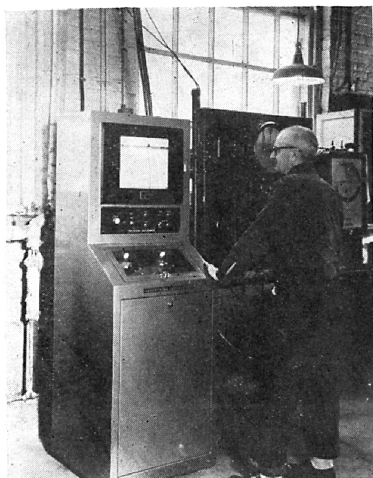
Featuring across sheet readings and an accuracy of within 1%, the AccuRay won the confidence of the machine operators during the first two weeks to the extent that they were annoyed when curious plant personnel obscured their view of the recording chart. Where previously spot weight checks were taken at the end of each roll, sampling 1/10% of production, the AccuRay now measures the material being produced 100% of the time. Operators developed the technique of establishing the sheet level at the beginning of each run by scanning the gauge across sheet and then spotting the gauge at one position except when taking periodic profile checks.

Use of the AccuRay to pin down weight now allows operators more time to check on other properties of the paper and enables them to make a

proper selection of samples for other than weight checks.

Operation of the AccuRay is basically simple. The main components of the gauge are a source of beta radiation, a detector of radiation, and an indicating or recording device. As the material being measured is run through a gap between the source and detector, the amount of radiation passing through the material to the detector varies according to the weight of the material. These variations in the amount of radiation passing through the material are measured by the detector unit and expressed on the recording device directly in terms of basic weight.

An outstanding feature of the AccuRay is its completely automatic operation, requiring no attention on the part of the machine operator for calibration or standardization. Every 30 minutes it automatically adjusts itself for changing plant conditions.



AccuRay Beta Gauge traverses sheet to provide cross-sheet profile readings. Information is presented instantly on chart recorders.