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COLLECTION Advisory Correspondence Files

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AEC letter - June 1961

Medical Research Reactor

Studies of neutron radiation effects in tissue cultures were begun in collaboration with investigators from the Sigan-Kettering Institute. Exposures were made at the external beam (therapy) aperture, employing a rotating holder to provide uniform radiation over two to six samples in each run. For these preliminary trials, each exposure was for 100 seconds, with the power adjusted at levels from 4 KW to 4 MW.

An exploration to establish the dose needed to produce a radiation shock syndrome was made, using the maximum full power exposure permitted under present operating regulations, directed into dog brain.

Chemical dosimeters prepared in a new form have been exposed to determine their utility in neutron fields. These were prepared as thin sheet material, variously loaded with lithium and other substances. A preliminary and approximate appraisal showed good response with excellent discrimination against gamma radiation. Further experimentation is needed to establish dose and dose-rate response characteristics.

Studies in tissue activation analysis and in animal exposure shielding are continuing. At the end of the month a full check of control rod performance was carried out; annealing of pore graphite pieces is being accomplished in an external oven.