

PRNC-31 PUERTO RICO NUCLEAR CENTER OPERATING LIMITS for L-77 REACTOR Operated by University of Puerto Rico UNDER CONTRACT NO. AT (40-11-1893) FOR U.S. ATOMIC ENERGY COMMISSION ---Page Break--- PUERTO RICO NUCLEAR CENTER Operating Limits of the L-77 Reactor that have been revised by the Technical Committee. They are hereby approved and put into effect as of January 2, 1954. ---Page Break--- PUERTO RICO NUCLEAR CENTER OPERATING LIMITS for L-77 reactor January 2, 1964 Operated by University of Puerto Rico under contract No. AT(40-1)-1833 for U.S. Atomic Energy Commission ---Page Break--- OPERATING LIMITS P.R.M.C. L-077 REACTOR Reactor Building Air conditioned, controlled access, Primary Coolant Secondary Coolant Maximum permissible reactivity above cold clean critical Maximum power level Maximum burnup Maximum fuel temperature Maximum moderator temperature Maximum permissible fuel loading Maximum reactivity to be held in experiments Maximum peak to average flux ratio Control & Safety System Minimum shutdown ratio, (safety 44/ core 47) Minimum shutdown margin, (safety e-core ae) Maximum reactivity addition rates Minimum reactivity reduction rate 0.5% $\Delta K/K$ 10 watts Noplightie axblont That amount which results in no more than 0.5% excess reactivity (1392 rans logs actual) not more than 0.5% 1.60 5.2 2.1% Oke 0.00758 $\Delta K/K$ at 0.007% $\Delta K/K$ average for normal control ---Page Break--- Minimum source rate for start-up 2.0008 N/eee Maximum scram settings a. power 150K of rated power be period 5 sec. Minimum frequency of scram test one month Minimum number and kinds of instrument channels for operation two a. Linear microtron circuit with contacts at either b. Seven decade logarithmic microcomputer and period never combination circuit with U.T.C. and adjustable high-power-level scram setting. Period meter has adjustable short period scram setting. Monitoring system Minimum number and kinds of monitoring channels three Twin recording

area radiation monitor with gamma and beta-gamma detectors, be Constant air monitor. G. Experimental Facilities: 1. Maximum total allowance for experimental facilities 0.5 kA K/e 2. No allowance made for type of cooling, fuel burnup, or temperature coefficient. 3. Insertion of new experiments must be approved by Reactor Division Head; he may request consultation from the Technical Committee and may postpone initiation of the experiment until adequate consultation is accomplished. H. Administrative and Procedural Safeguards 2. Minimum personnel qualifications 8. Reactor Division Head i. Master's technical degree 2 ---Page Break --- LL at least one year of graduate work and adequate nuclear science experience. b. Reactor Supervisor 1 technical degree with background in nuclear science and/or engineering with adequate experience in reactor operation supervision. c. Reactor Operators 4 month theoretical and practical course in reactor operation. Minimum operating personnel requirements 4. Normal operation one reactor operator b. Operations involving fuel loading, few experimental setups, nuclear instrumentation and control maintenance at least one operator, one reactor supervisor and other personnel as required. Minimum records to be kept a + form 400, Check List ~ start-up BN " GOL, Check List ~ Operations and Shut Down 8 "402, Weekly Report ao" "1GL, Weekly and Monthly Check List Minimum loading steps No deviation from the procedures set forth by the manual, "Procedures for Installation and Reloading of 1-77 Reactor" is to be allowed, ---Page Break---