Table 3
Some physical properties of uranium dioxide

Temp, F	Thermal Conductivity° Btu/sq ft, hr, F/in.	Coefficient of Linear Expansion† (in./in. F) 10^6°	Specific Heat
300	48.6	5.67	0.056
1000	28.4	5.67	0.067
2000	18.7	5.73	0.072
3000	16.0	6.58	0.075
4000	16.6	7.42	0.081
5000	20.3	—	0.094

° Based on 95% density pellets.

† Between 70F and temperature shown.

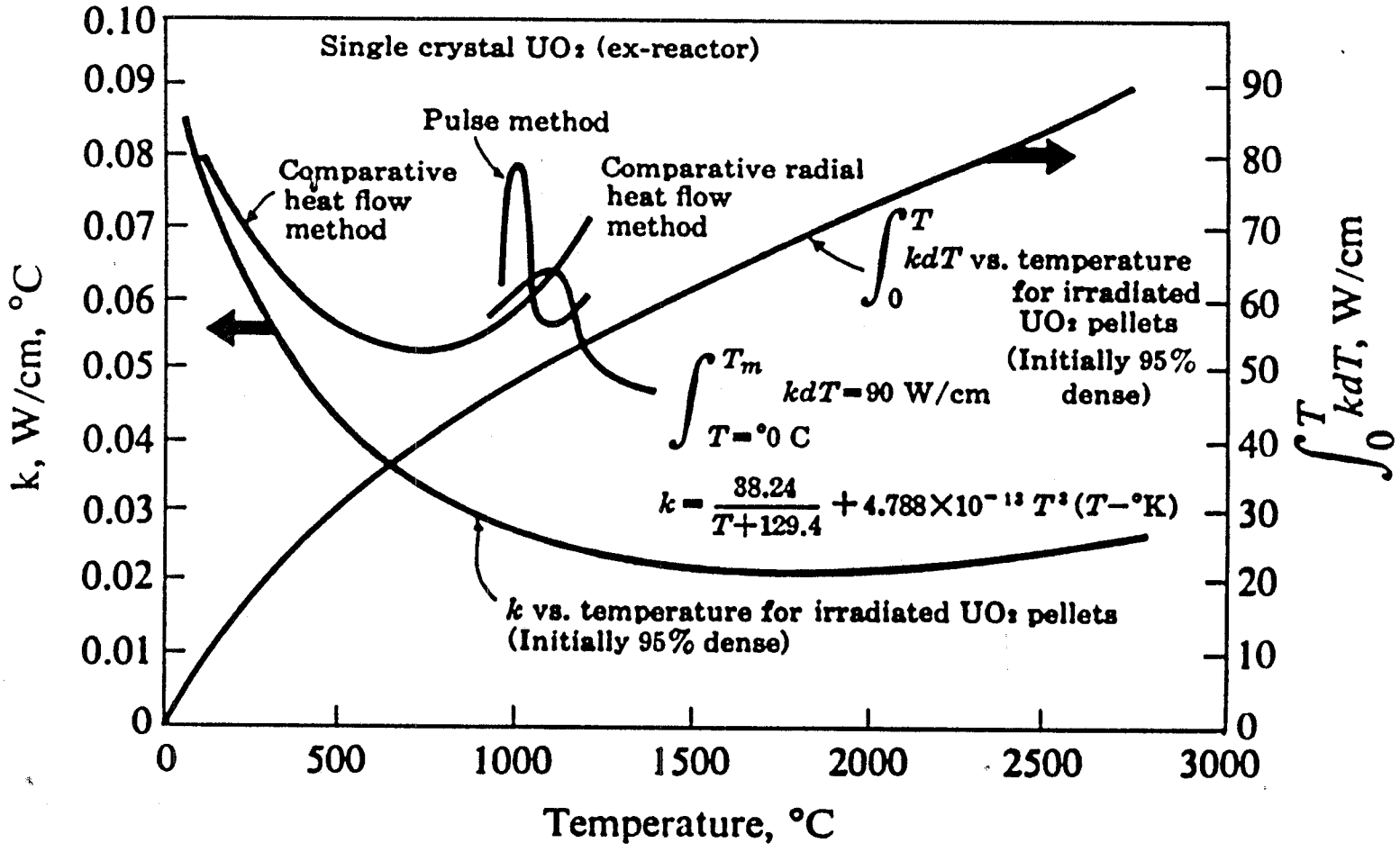

FIG. 11.22 UO_2 Thermal Conductivity and $\int_0^T k\,dT$ versus Temperature. [From Pashos, T. J., and others, "Irradiation Behavior of Ceramic Fuels," *Proceedings of the Third United Nations Conference on the Peaceful Uses of Atomic Energy*, Paper No. A/conf. 18/P/240, September, 1964.]

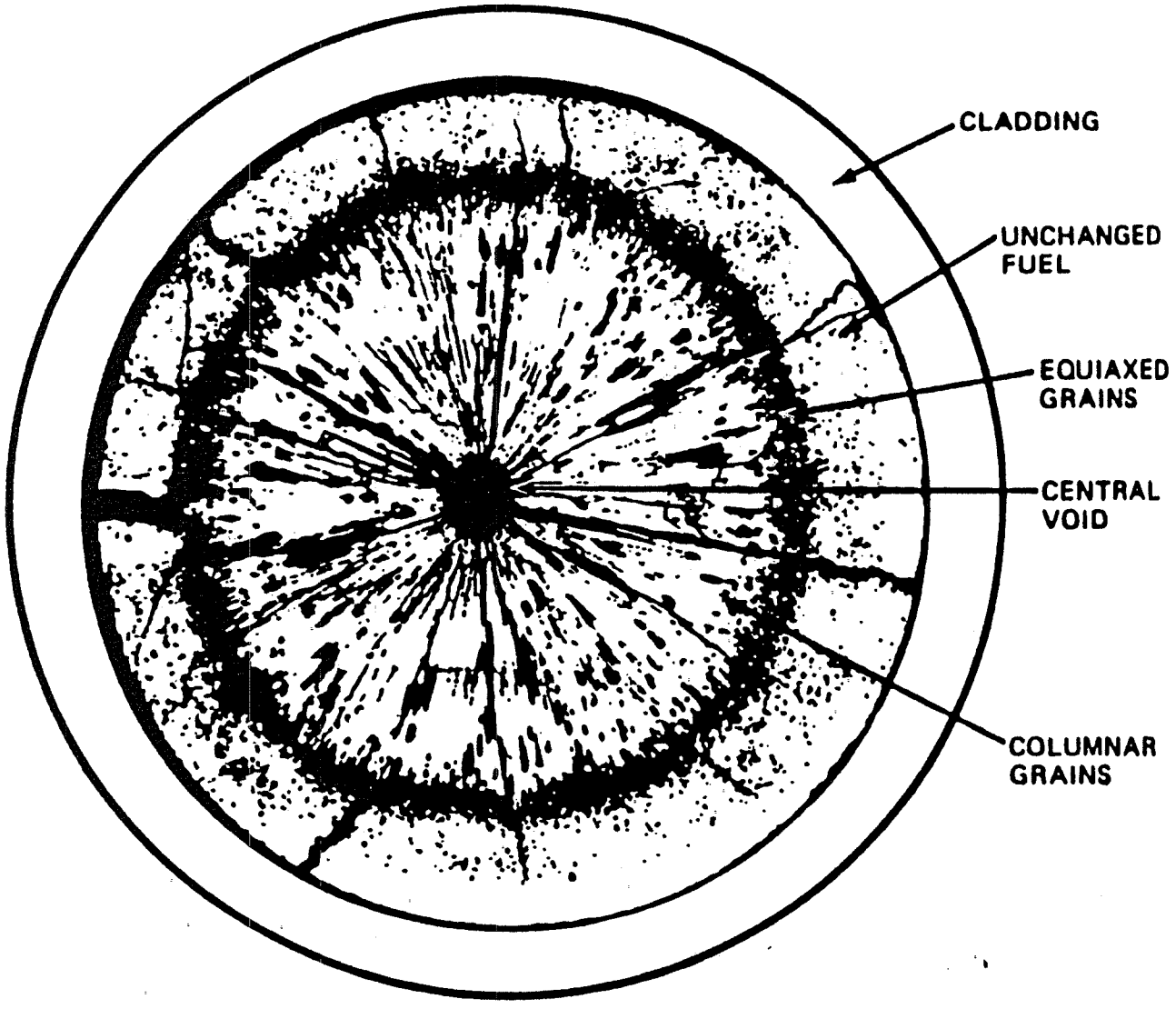

Fig. 8.8. Cross section of an oxide fuel pellet showing restructuring following extended neutron irradiation (M. D. Freshley, BNWL). (Structural changes are much less in normal operation of commercial water-cooled reactors.)

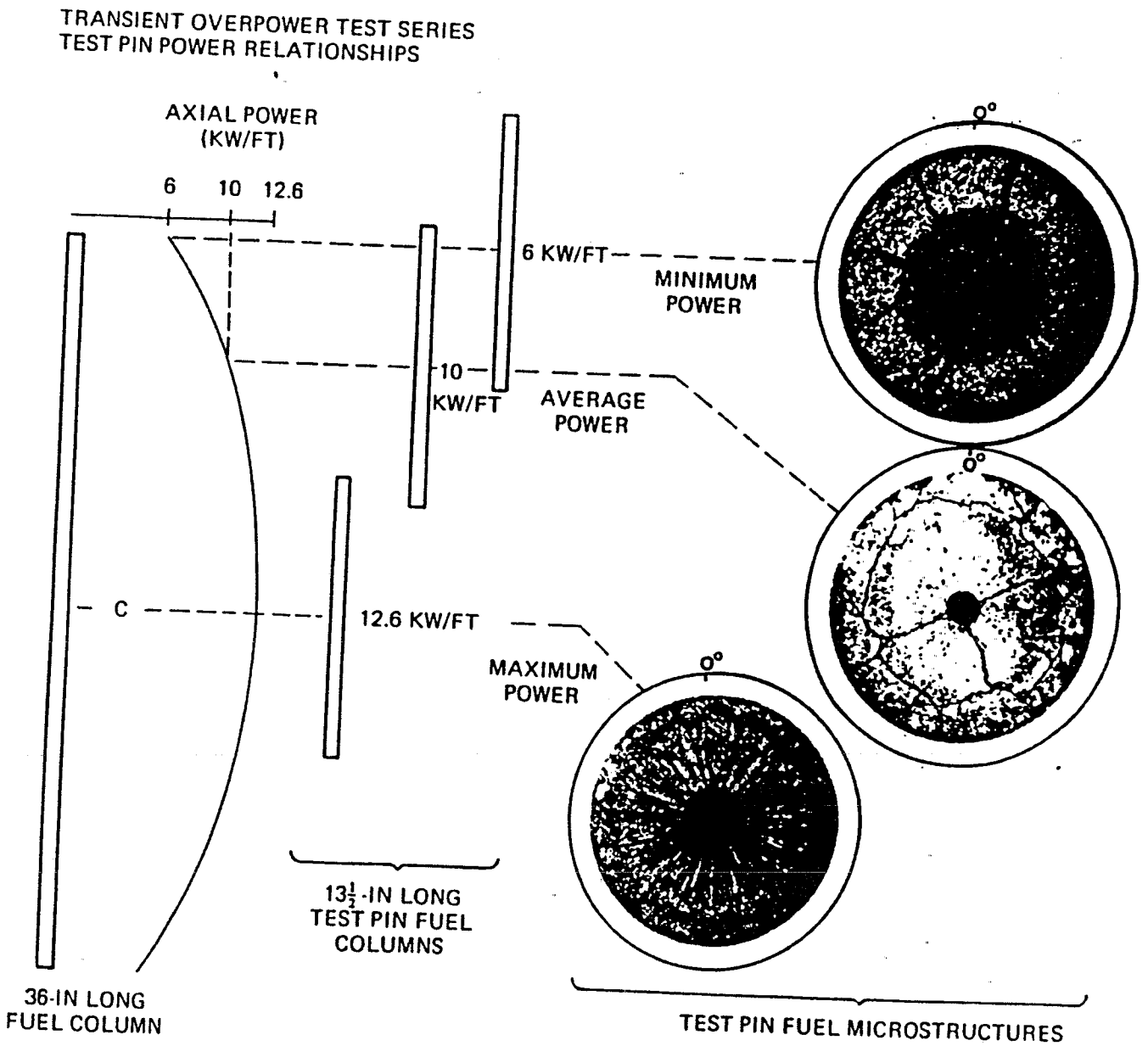

FIGURE 9-4

Mixed-oxide fuel restructuring versus linear heat rate. (Photograph courtesy of the Hanford Engineering Development Laboratory, operated by Westinghouse Hanford Company for the U.S. Department of Energy.)

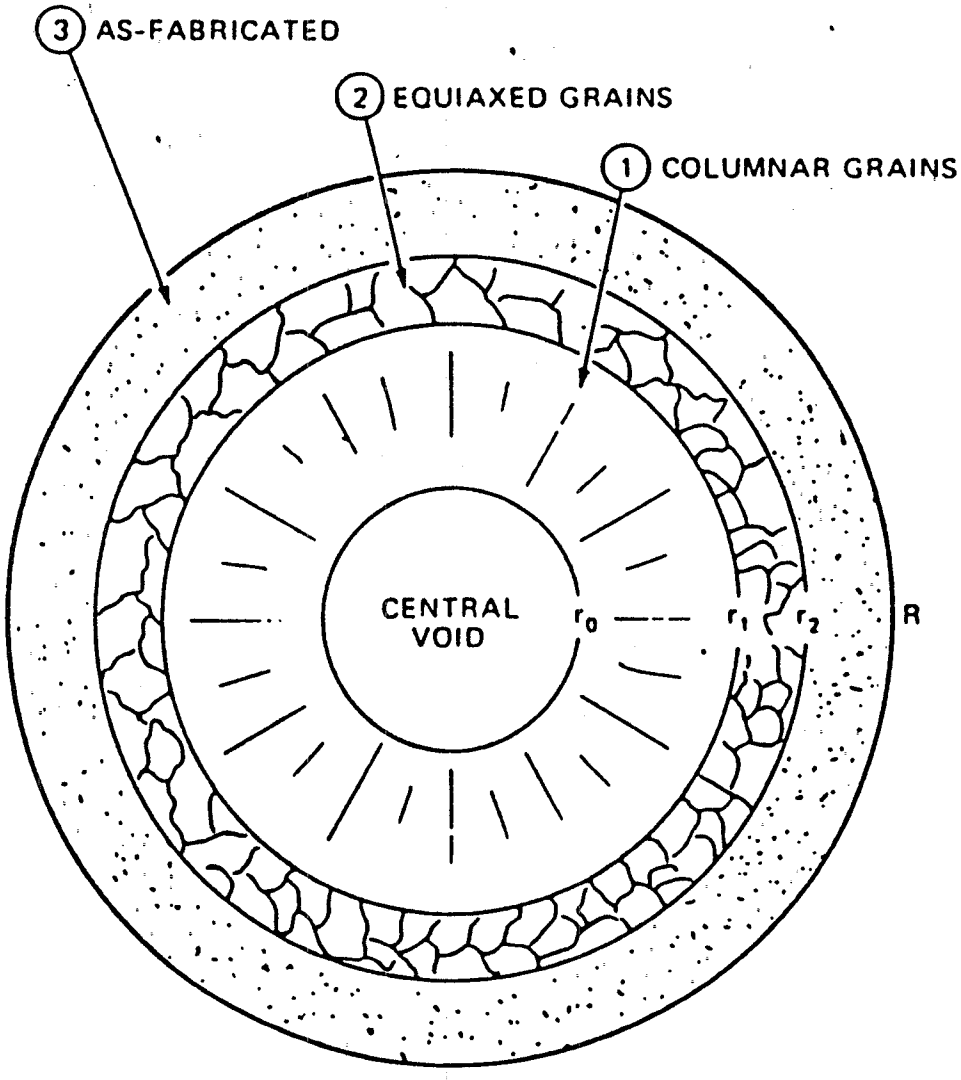

FIGURE 9-5
Features of mixed-oxide fuel restructuring. (From D. R. Olander, *Fundamental Aspects of Nuclear Reactor Fuel Elements*, TID-26711-P1, 1976.)

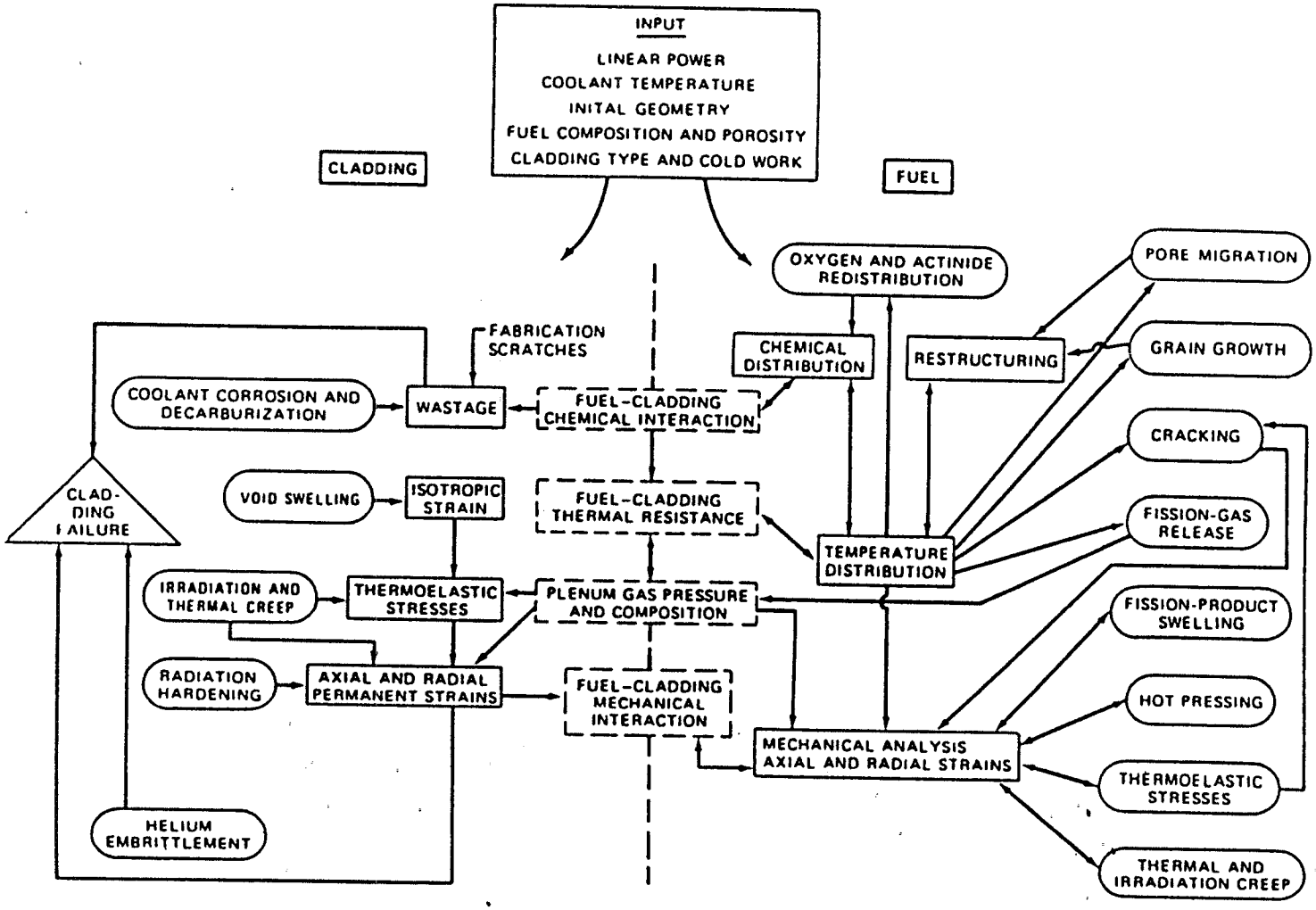

FIGURE 9-6

Flow chart for representative fuel-rod design interactions. (From D. R. Olander, *Fundamental Aspects of Nuclear Reactor Fuel Elements*, TID-26711-P1, 1976.)