
22.251 LAB Exercise 2

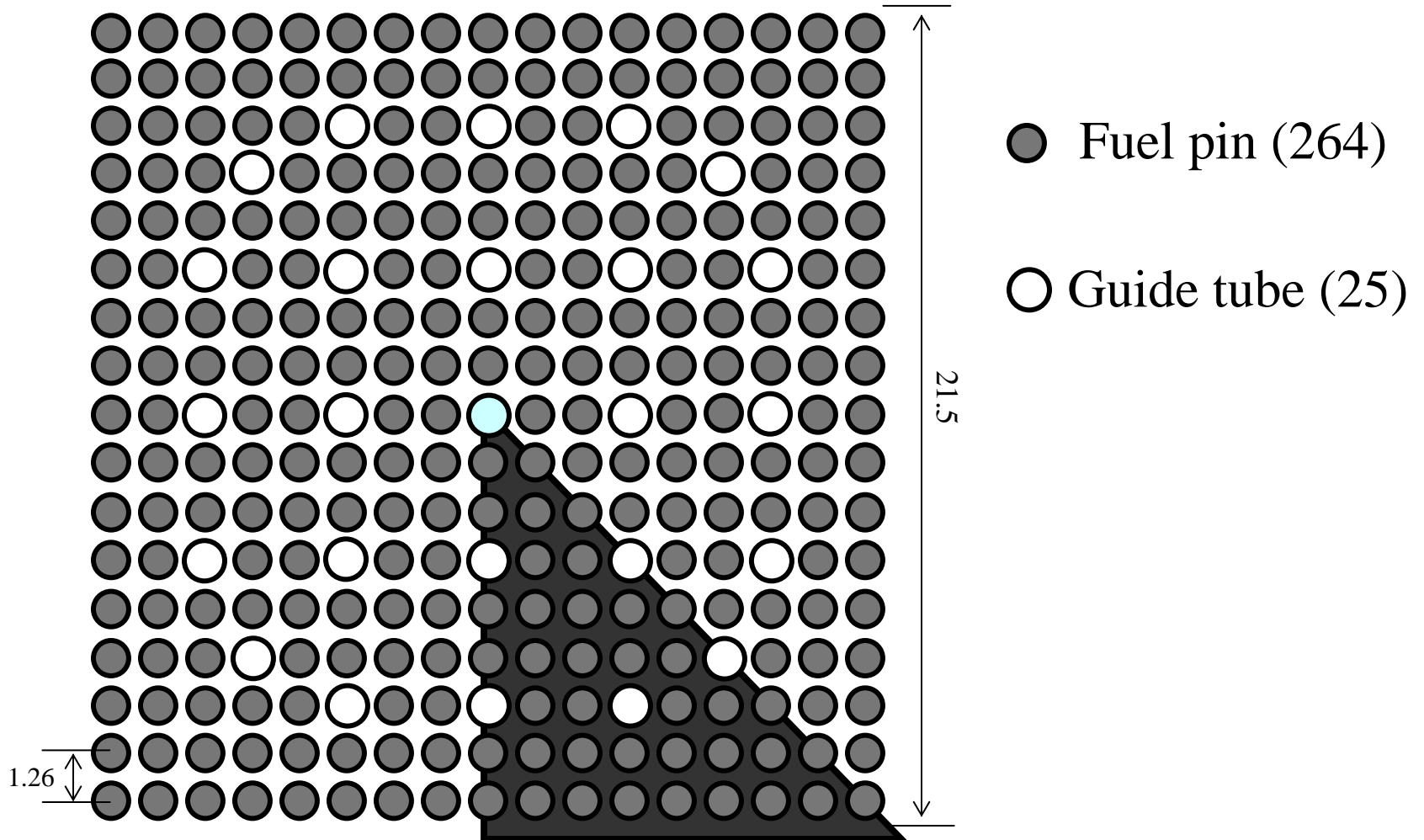
CASMO-4 Fuel Assembly Calculations



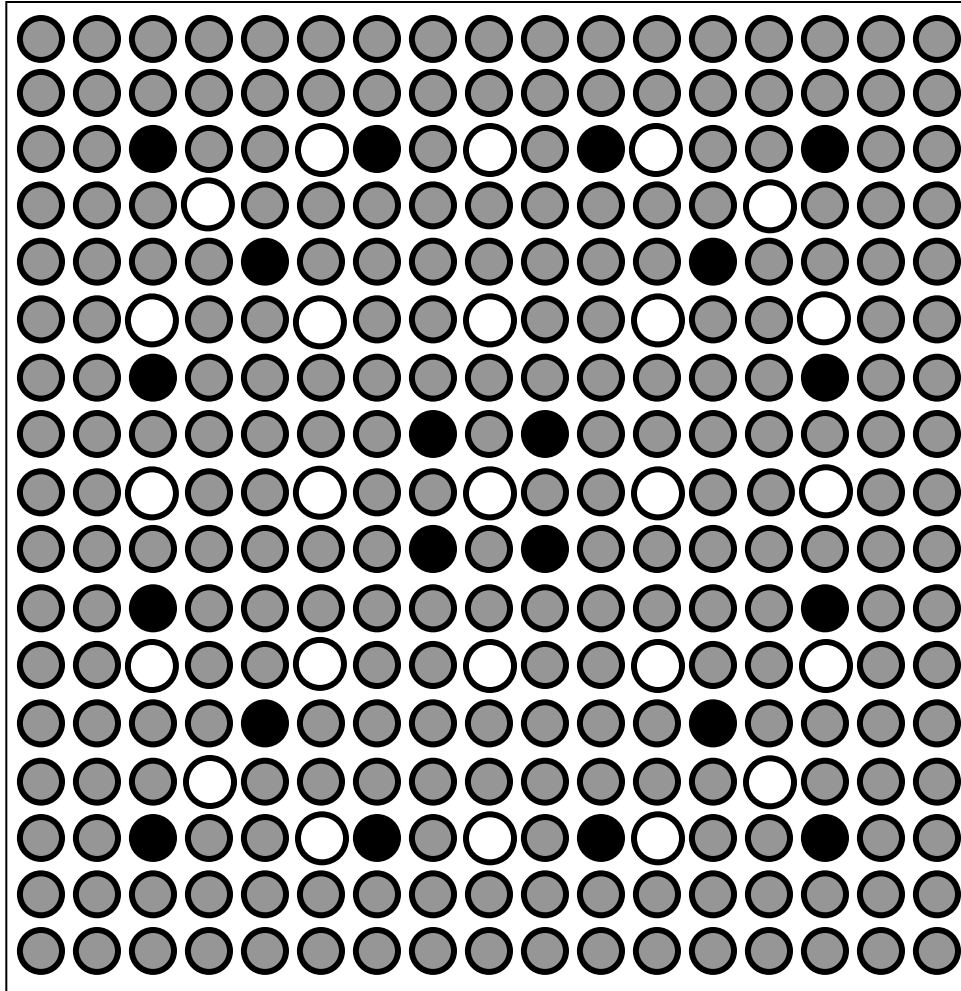
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September 25, 2009

Westinghouse 17x17 Standard Assembly



Gd₂O₃ Poisoned Assembly Layout



- Fuel pin (244)
- Guide tube (25)
- 6% w/o Gd₂O₃ (20)

CASMO input for fuel assembly

TTL * STANDARD WESTINGHOUSE ASSEMBLY MODEL

TFU=900.0 TMO=583.1 BOR=0.0 VOI=0.0

FUE 1 10.3/4.4

FUE 2 10.1/3.1 64016=6.0

CRA 10.17/47000=80 49000=15 48000=5

PIN 1 0.4096 0.4178 0.4750/"1" "AIR" "CAN"

PIN 2 0.5690 0.6147/"COO" "BOX"

PIN 3 0.4096 0.4178 0.4750/"2" "AIR" "CAN"

PIN 4 0.4331 0.4369 0.4839 0.5690 0.6147/

"AIC" "AIR" "CRS" "COO" "BOX"//1 "AIC"

PRE 155.0

PDE 38.0

PWR 17 1.260 21.50,,,,,8

DEP -60.0

LPI

2

1 3

1 1 1

2 1 1 2

1 1 1 1 3

1 1 1 1 1 2

2 1 3 2 1 1 3

1 1 1 1 1 1 1

1 1 1 1 1 1 1 1

NLI

STA

END

* Fuel

* BP with fuel (Gd203/UO2)

* Ag-In-Cd

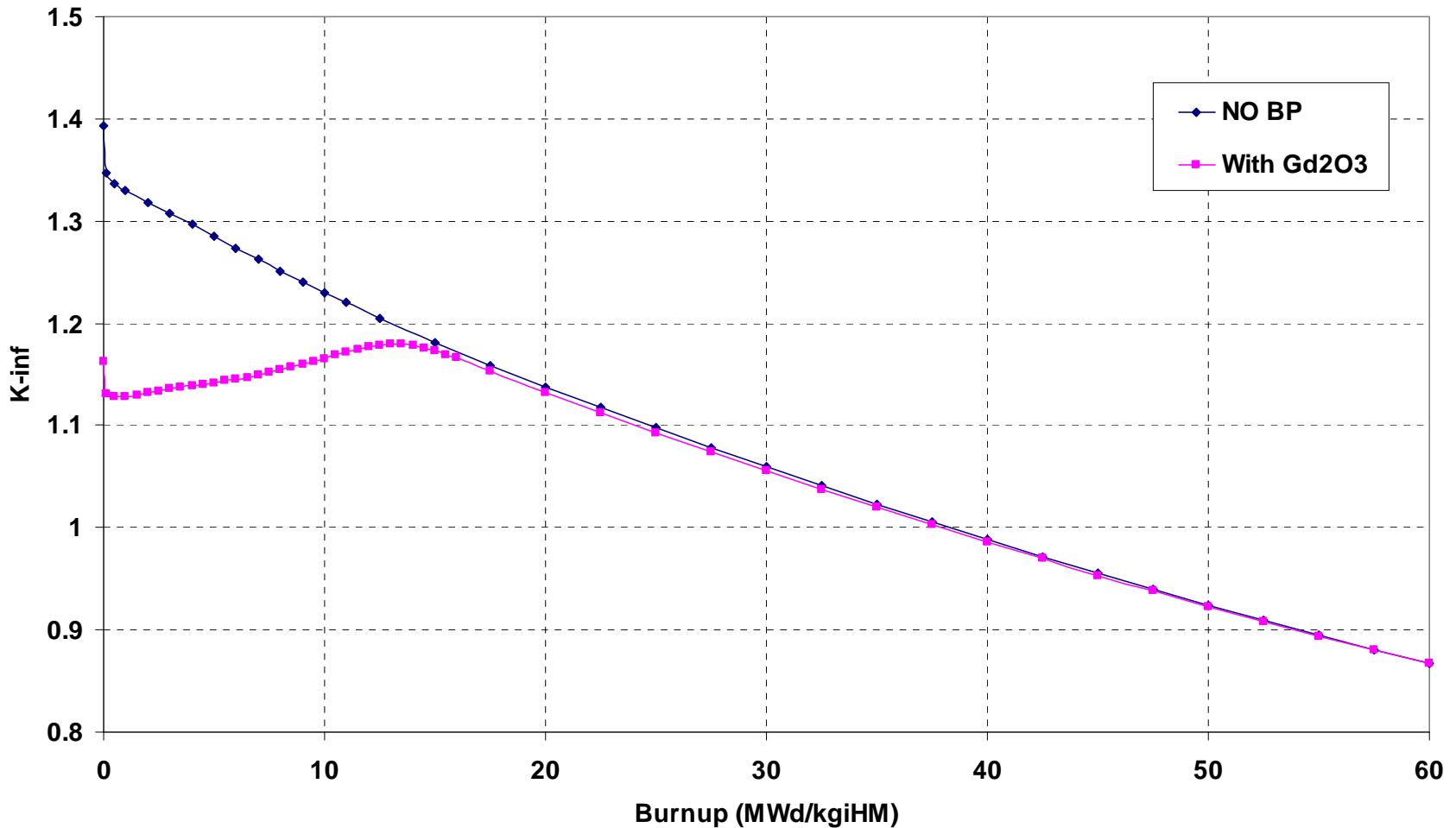
* fuel rod

* guide tube

* BP rod

* No list option

Effect of Burnable Poison on Reactivity



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22.251 Systems Analysis of the Nuclear Fuel Cycle
Fall 2009

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