

11/29/99

1. Description of SFP
2. Picture of SFP
3. Initiation (needed for release timing)

Conservatism in the adiabatic heatup calculation ---
compare it w/ SFUEL results.

4. Propagation (needed for release timing and magnitude)

Need figure showing decay heat in each assembly
in spent fuel pool

5. How does initiation + propagation compare with a
reactor core.

B/33

SFP Description:

BWR - in reactor building.

- bottom of pool at same elevation as the upper portion of reactor vessel.

PWR - in auxiliary building.

- bottom of pool is at grade for some.
surface of pool is at grade for others.

SFP

10.4" cell-to-cell pitch PWR
5" orifice at bottom of cell.

6.25" cell-to-cell pitch BWR
4" orifice at bottom of cell = 102 mm

orifice = opening for fluid to pass

BWR rod pitch = 16.2 mm
reactor 8x8 square array
 outer dimension of assy = 139 mm.

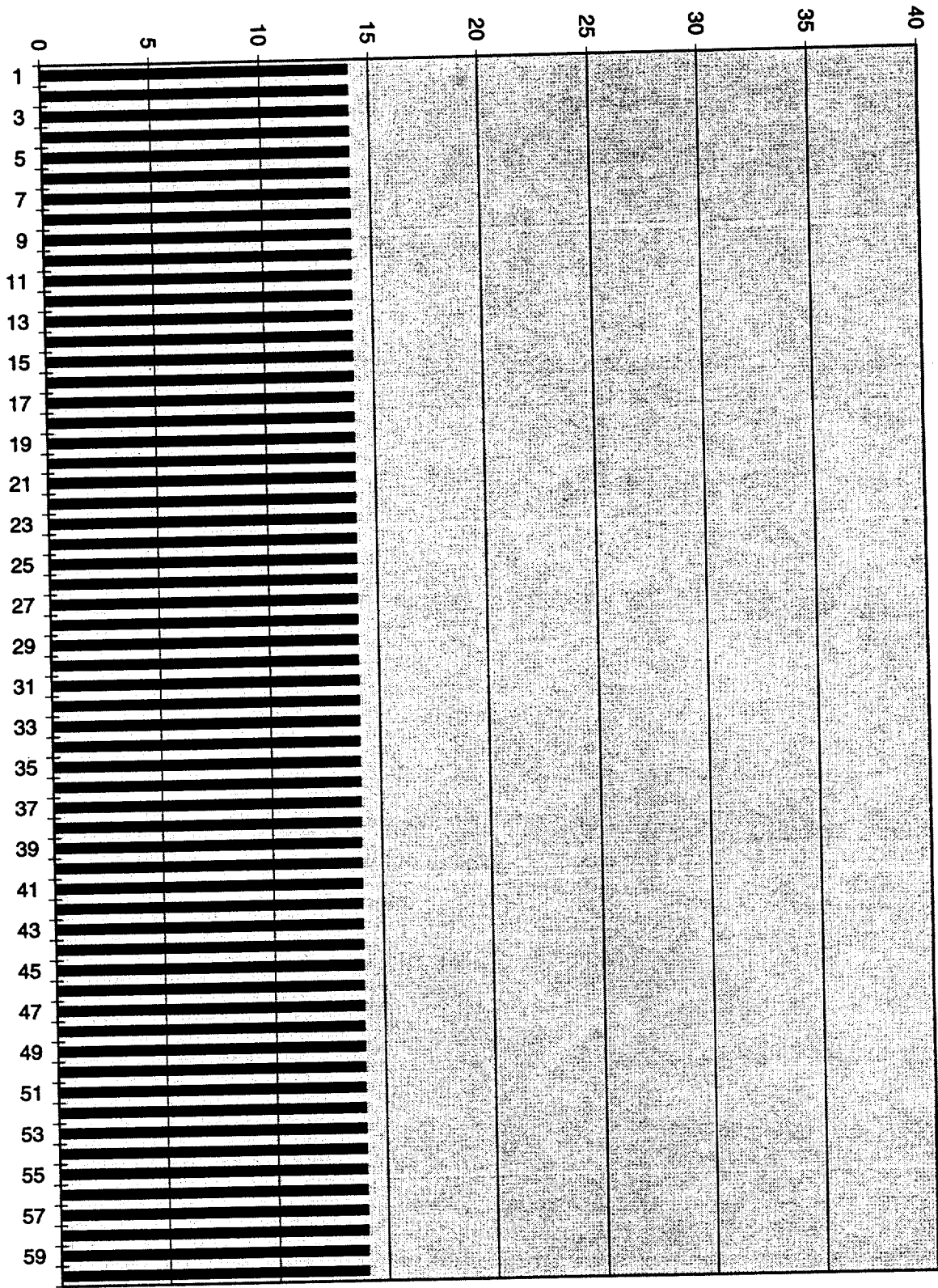
$$139 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} \times \frac{1 \text{ inch}}{2.54 \text{ cm}} = 5.47 \text{ inches}$$

$$\frac{6.26 \text{ inches}}{5.47 \text{ inches}} = .8 \text{ inches}$$

$$6.25 \text{ inches} \times 60 = 375 \text{ inches} = 31.25 \text{ ft}$$

$$\frac{3300 \text{ assemblies/SFP}}{764 \text{ assemblies/core}} = 4.3 \frac{\text{cores}}{\text{SFP}}$$

Height
(ft)



Series2

Chart1

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Time to
heat up to
FP release
see Fig 2.2-2

Heamp of fuel rod
fuel assembly - 30 days of decay
fuel assembly - 1 year of decay

Potential to spread from fuel assy
nearly removed to all fuel assy:

Critical decay time PWR { 23 months, 17 months
9 months, 7 months
BWR - 6 months, 7 months

High burnup fuel 36 - 60 months

