NUCLEAR SYSTEMS I (3rd Printing): THERMAL HYDRAULIC FUNDAMENTALS

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ERRATA

PAGE (Line, Fig., Eq., Ex.)	ORIGINAL	CORRECTED
31 (Table 2-3)	BWR, Reactor vessel, Linear heat rate, Core average (kW/m) is given as 19.0	Should be 20.26
116 (Table 4-10, Cylindrical, last line	$\ldots = \ldots\left[\ldots + \frac{1}{r^2}\frac{\partial \upsilon_z}{\partial \theta^2} + \ldots\right]\ldots$	$\ldots = \ldots\left[\ldots + \frac{1}{r^2}\frac{\partial^2 \upsilon_z}{\partial \theta^2} + \ldots\right]\ldots$
118 (Table 4-12, Spherical)	$p\frac{Dh}{Dt} = \ldots$	$\rho\frac{Dh}{Dt} = \ldots$
131 (A.2)	where $\tilde{\alpha}_v$ = a local time-averaged void fraction.	where $\tilde{\alpha}_k$ = a local time-averaged phase fraction. Again for the gaseous phase $\tilde{\alpha}_k = \tilde{\alpha}_v$.
133 (Line 1, above Eq. 5-21)	$\langle c \rangle' = 0$	$\overline{\langle c \rangle'} = 0$
142 (bottom, title)	H Summary of Useful …	I Summary of Useful …
232 (Line 15)	$\dot{Q}_R = \dot{m}c_p(T_3 - T_2) + \ldots$	$\dot{Q}_R = \dot{m}c_p(T_3 - T_{2'}) + \ldots$
358 (Table 9-1)	where $\equiv \frac{\text{small cross - sectional area}}{\text{large cross - sectional area}}$	where $\beta \equiv \frac{\text{small cross - sectional area}}{\text{large cross - sectional area}}$
378 (1st paragraph)	... (where ε_M = ...	... (where $\varepsilon_M = 0$), an intermediate or buffer sublayer, and a fully turbulent sublayer (where $\mu << \rho\varepsilon_M$). ...
378 (Eq. 9-77)	$V_m = 0.187 V_{℄}$	$V_m = 0.817 V_{℄}$
383 (Fig. 9-22, caption)	... for parallel flow in a rod bundle.	... for parallel flow in an infinite triangular array of rods.
387 (Line 18)	... (where H = axial lead of the wire wrap).	... (where H = the lead length or axial pitch of the wire wrap).

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389 (Eq. 9-93a)	$C_{fT} = \left[0.8063 - 0.9022(\log_{10}(H/D)\right] + 0.3256\left[\log_{10}(H/D)\right]^2 (P/D)^{9.7}(H/D)^{1.78-2.0(P/D)}$	$C_{fT} = \left[0.8063 - 0.9022\left(\log_{10}(H/D)\right) + 0.3526\left[\log_{10}(H/D)\right]^2\right] \cdot (P/D)^{9.7}(H/D)^{(1.78-2.0(P/D))}$
400 (3 Viscous...)	Kays' defintions of K_e and K_c need to be added.	Kays' definitions for K_e and K_c, which apply to Fig. 9-36 and are consistent with the general definition of K in Eq. 9-23: $\Delta p_{\substack{form \\ expansion}} = \left[\left(1-\beta^2\right) - K_e\right]\frac{\rho \upsilon_{ref}^2}{2}$ $\Delta p_{\substack{form \\ contraction}} = \left[\left(1-\beta^2\right) + K_c\right]\frac{\rho \upsilon_{ref}^2}{2}$
402 (B Assumption...)	Same as page 400 above.	Same as page 400 above.
407 (Prob. 9-1)	Emptying of a liquid task	Emptying of a liquid tank
409 (Prob. 9-5, Answers)	$\Delta p_{entrance} + \Delta P_{exit} = 11.73$ kPa $\Delta p_T = 94.59$ kPa	$\Delta p_{entrance} + \Delta p_{exit} = 10.73$ kPa $\Delta p_T = 93.59$ kPa
427 (Table 10-6)	Table 10-6	Table 10-4
440 (Eq. 19-80b)	$k_t^2 \equiv \frac{1}{2}\left(\overline{\upsilon}_i'\overline{\upsilon}_i'\right) = \dots$	$k_t^2 \equiv \frac{1}{2}\left(\overline{\upsilon_i'\upsilon_i'}\right) = \dots$
527 (Fig. 12-3)	$q''_{cr} = C_{1\rho g} h_{fg}[\dots]^{1/4}$	$q''_{cr} = C_1 \rho_g h_{fg}[\dots]^{1/4}$
529 (Fig. 12-4)	The boundary between regions B and C is not at the same axial elevation as the boundary between the regions of "Subcooled boiling" and "Saturated nucleate boiling".	These two boundaries should be pictured at the same axial elevation along the heat transfer region.
529 (Fig. 12-4)	The boundary between regions D and E is not at the same axial elevation as the boundary between the regions of "Saturated nucleate boiling" and "Forced convective heat transfer through liquid film".	These two boundaries should be pictured at the same axial elevation along the heat transfer region.
530 (Fig. 12-6)	Abscissa unlabeled	Abscissa is: quality, x
535 (Eq. 12-19)	ST = …	St = …

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536 (Fig. 12-10)	$St = q''_w G c_{pL} \Delta T_D$	$St = q''_w / G c_{pL} \Delta T_D$
554 (Eq. 12-49)	$h = \frac{k_g}{z}[\ldots]^{1/4}$	$h = C\frac{k_g}{z}[\ldots]^{1/4}$
565 (Eq. 12-73a)	$x_{cr} = \frac{D_h}{D_e}(\ldots)$	$x_{cr} = \frac{D_e}{D_h}(\ldots)$
574 (Problem 12-2)	$q''_s = \ldots\left[\frac{c_{p,\ell}(T_w - T_{sat})}{C_{s,f} h_{fg} Pr_\ell^s}\right]$	$q''_s = \ldots\left[\frac{c_{p,\ell}(T_w - T_{sat})}{C_{s,f} h_{fg} Pr_\ell^s}\right]^{\mathbf{3}}$
577 (Eq. 5-72)	$h_m = \{\alpha\rho_v h_v = \ldots$	$h_m = \{\alpha\rho_v h_v + \ldots$
656 (Table E-2, title)	… of dry saturated steam pressure	… of steam and water at saturation
658 (Table E-3, title)	… of dry saturated steam temperature	… of steam and water at saturation
695 (Index)	Froude number, 677	Froude number, 675