Erratum: "A Proposed General Method of Stress Analysis for Tubesheet of Heat Exchanger" [ASME J. Pressure Vessel Technol., 2016, 138(6), p. 061201; DOI: 10.1115/1.4033530]

This erratum corrects errors in the originally published paper.

In Appendix C—Sec. C.1 on page 061205-9, the definition of coefficients for Eq. (C4) is corrected as follows:

where $a = D_1^*$, $b = +H_{a1}$, and $c = 2k_w$.

In Appendix C—Sec. C.1 on page 061205-9, Eq. (C5*a*) is corrected as follows:

$$x_1,\ x_2 = -\frac{\boldsymbol{H_{a1}}}{2\boldsymbol{D_1^*}} \pm \mathbb{i}\frac{\sqrt{4(2k_w)D_1^* - H_{a1}^2}}{2D_1^*} = \lambda^2 \cdot e^{\pm 2\theta \mathbb{i}} \tag{C5a}$$

In Appendix C—Sec. C.1 on page 061205-9, Eq. (C5*c*) is corrected as follows:

$$2\theta = \text{Arc}\cos\left[-\sqrt{H_{a1}^2/(8k_wD_1^*)}\right] \tag{C5c}$$

In Appendix C—Sec. C.1 on page 061205-10, Eqs. (C9*a*)–(C9*c*) are corrected as follows:

$$\sqrt{\frac{H_{a1}^2}{8k_wD_1^*}} = \frac{\sqrt{\left|\frac{1}{2}\left(\frac{H_{a1}}{D_1^*} + \frac{H_{a1}}{D_1^*}\right)\right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_1^*}}} \ll 1 \tag{C9a}$$

$$\psi_{H1} = \frac{\sqrt{\left|\frac{1}{2}\left(\frac{H_{a1}}{D_1^*} + \frac{H_{a2}}{D_2^*}\right)\right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_2^*}}} \ll 1 \tag{C9b}$$

$$\psi_{H2} = \frac{\sqrt{\left|\frac{1}{2}\left(\frac{H_{a1}}{D_1^*} - \frac{H_{a2}}{D_2^*}\right)\right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_2^*}}} \ll 1 \tag{C9c}$$

In Appendix C—Sec. C.2 on page 061205-10, the definition of coefficients for Eq. (C16) is corrected as follows:

where $a = 1$, $b = +2\boldsymbol{H}_1$, $c = \alpha^4 + H_1^2 - H_2^2$, and $d = -[\boldsymbol{H}_2(\boldsymbol{\alpha}_1^4 - \boldsymbol{\alpha}_2^4) - \boldsymbol{H}_1\boldsymbol{\alpha}^4]$.

In Appendix C—Sec. C.2 on page 061205-10, Eq. (C19*a*) is corrected as follows:

$$Z_{1,H} = \begin{Bmatrix} A_1I_0(\sqrt{-x_1}r) + [C_1U_0(\lambda r,\theta) + C_2V_0(\lambda r,\theta)] \\ A_2K_0(\sqrt{-x_1}r) + [A_3\bar{U}_0(\lambda r,\theta) + A_4\bar{V}_0(\lambda r,\theta)] \end{Bmatrix} \tag{C19a}$$

In Appendix C—Sec. C.2 on page 061205-11, Eq. (C20) is corrected as follows:

$$Z_{1,H} = A_1I_0(\sqrt{-x_1}r) + [C_1U_0(\lambda r,\theta) + C_2V_0(\lambda r,\theta)] \tag{C20}$$

In Appendix C—Sec. C.3 on page 061205-11, Eqs. (C26) and (C29) are corrected as follows:

$$\nabla^2\cdot\nabla^2Z_2 = -(\alpha_1^4 - \alpha_2^4)\left[C_1U_0\left(\alpha r,\frac{\pi}{4}\right) + C_2V_0\left(\alpha r,\frac{\pi}{4}\right)\right] + 2\left(\zeta_2\frac{P_{a1}}{D_1^*} - \zeta_1\frac{P_{a2}}{D_2^*}\right) \tag{C26}$$

$$\nabla^2\cdot\nabla^2Z_2 = 2\left(\zeta_2\frac{P_{a1}}{D_1^*} - \zeta_1\frac{P_{a2}}{D_2^*}\right) \tag{C29}$$

In Appendix C—Sec. C.3; on page 061205-11, Equations (C31a) and (C31b) are corrected as follows:

$$F_1 = (\zeta_2 - \zeta_1)[C_1\cos 4\theta - C_2\sin 4\theta] \tag{C31a}$$

$$F_2 = (\zeta_2 - \zeta_1)[C_1\sin 4\theta + C_2\cos 4\theta] \tag{C31b}$$

In Appendix C—Sec. C.4 on page 061205-12, expressions for b and d are corrected as follows:

$$b = +2H_1 \quad \text{and} \quad d = -[H_2(\alpha_1^4 - \alpha_2^4) - H_1\alpha^4] \approx 0$$

In Appendix C—Sec. C.4 on page 061205-12, Eq. (C39) and its solution are corrected as follows:

$$x^3 + 2\boldsymbol{H}_1\ x^2 + \alpha^4x = 0 \tag{C39}$$

$$x_2,\ x_3 = -\boldsymbol{H}_1 \pm \mathbb{i}\sqrt{\alpha^4 - H_1^2} = \lambda^2\cdot e^{\pm 2\theta\mathbb{i}}$$

In Appendix C—Sec. C.4 on page 061205-12, expression for 2θ is corrected as follows:

$$2\theta = \text{Arc}\cos\left[\frac{-\boldsymbol{H}_1}{\boldsymbol{\alpha}^2}\right] \to \frac{\pi}{2}$$

In Appendix E on page 061205-13, Eqs. (E2) and (E4) are corrected as follows:

$$\varphi_{f,si} = \frac{12}{h_{f,si}^3E_{f,si}ln\frac{R_{f,si}}{R_{si}}}\begin{Bmatrix} -R_{m,si}M_{si} - \frac{h_{f,si}}{2}R_{m,si}Q_{si} \\ +\frac{(R_{G,si} - \boldsymbol{R_{si}})}{4}\left(R_{G,si}^2 - \boldsymbol{R_{si}^2}\right)P_{si} \\ -R_{B,si}W_{B,si}(R_{B,si} - R_{si}) \\ +R_{G,si}W_{G,si}(R_{G,si} - R_{si}) \\ +R_{m,si}N_{si}(R_{m,si} - R_{si}) \end{Bmatrix} \tag{E2}$$

$$\varphi_{f,si} = \frac{12}{h_{f,si}^3 E_{f,si} ln \dfrac{R_{f,si}}{R_{si}}} \left\{ \begin{array}{c} -R_{m,si} M_{si} - \dfrac{h_{f,si}}{2} R_{m,si} Q_{si} \\ + \dfrac{(R_{G,si} - \boldsymbol{R_{si}})}{4} \left(R_{G,si}^2 - \boldsymbol{R_{si}^2} \right) P_{si} \\ + R_{m,si} N_{si} (R_{m,si} - R_{G,si}) \\ - R_{B,si} W_{B,si} (R_{B,si} - R_{G,si}) \\ + (R_{G,si} - R_{si}) \left(R_{G,si}^2 - R_{si}^2 \right) P_{si}/2 \end{array} \right\} \quad \text{(E4)}$$

In Appendix H on page 061205-15, Eqs. (H2) and (H4) are corrected as follows:

$$\nabla^2 \cdot \nabla^2 w_{Ai} = \frac{P_{si} - P_{ti}}{D_i} \quad \text{(H2)}$$

$$\nabla^2 \cdot \nabla^2 w_{Ai} - \frac{\tilde{H}_{ai}}{D_i} \nabla^2 w_{Ai} = \frac{P_{si} - P_{ti}}{D_i} \quad \text{(H4)}$$