**STANDARD NOMENCLATURE**

**Independent Variables**

r  Radial coordinate in cylindrical geometry
1  Time
θ  Azimuthal coordinate in cylindrical geometry
x  Coordinate for one-dimensional geometry
z  Axial coordinate in cylindrical geometry

**Other Variables**

A  Area
c  Shear or friction coefficient in two-fluid equations
c_p  Specific heat at constant pressure
c_v  Specific heat at constant volume
D  Diameter
e  Specific internal energy
FA  Flow area
g  Acceleration caused by gravity
G  Mass flux \((\rho_m V_m)\)
h  Specific enthalpy or heat-transfer coefficient
h_lg  Latent heat of vaporization
H  Pump head \((\Delta P/\rho)\)
k  Thermal conductivity, form-loss coefficient, pipe roughness, or reactor multiplication constant
m  Mass
Nu  Nusselt number
p  Pressure or power
q  Heat-generation rate
q''  Heat flux
q'''  Volumetric heat-generation rate
Q  Pump volumetric flow
R  Radius or neutronic reactivity
Re  Reynolds number
T  Temperature

**Other Variables**

V  Velocity
vol  Hydrodynamic cell volume
We  Weber number
X  Quality
α  Vapor volume fraction or absorptivity
Γ  Net volumetric vapor-production rate caused by phase change
δ  Mean fuel-surface roughness
Δ  Increment
ε  Emissivity
μ  Viscosity
ρ  Microscopic density
σ  Surface tension or Stefan-Boltzmann constant
\( \tau \)  Shear stress
\( \phi \)  Two-phase friction-factor multiplier
\( \omega \)  Angular velocity
\( \Omega \)  Pump-impeller angular velocity

Subscripts

- \( \text{a} \)  Noncondensable-gas component
- \( \text{b} \)  Bubble
- \( \text{c} \)  Cladding
- \( \text{d} \)  Droplet
- \( \text{f} \)  Fuel or friction
- \( \text{g} \)  Gas field or vapor
- \( \text{h} \)  Hydraulic
- \( \text{i} \)  Interface (liquid-vapor) quantity or one-dimensional cell in heat-transfer equations
- \( \text{j} \)  One-dimensional cell index in hydrodynamics equations
- \( \text{l} \)  Liquid field
- \( \ell \)  Liquid field
- \( \ell_{\text{g}} \)  Liquid to vapor
- \( \text{m} \)  Mixture quantities
- \( \text{s} \)  saturation conditions
- \( \text{sat} \)  saturation conditions
- \( \text{v} \)  vapor
- \( \text{w} \)  wall property