



ALCOA++ Data Integrity Principles

Principle	Definition	Key Expectations
A – Attributable	Data must clearly identify who recorded the data and when.	Signed, dated, and identifiable entries All changes traceable to the responsible individual
L – Legible	Data must be clear, readable, and understandable.	No ambiguity for monitors, auditors, or regulators Supports accurate review and verification
C – Contemporaneous	Data must be recorded at the time the activity occurs.	Real-time entry of data Dates, initials, and timestamps recorded correctly Prevents recall errors and omissions
O – Original	Data must be maintained as original records or certified true copies.	Ensures authenticity and accuracy Maintains confidentiality Supports regulatory credibility
A – Accurate	Data must be truthful, consistent, and error-free.	Corrections are justified and traceable Original entries remain visible
C – Complete	All required data must be fully documented.	No missing or unexplained information Supports meaningful analysis and collaboration

Enhanced Principle	Description	Key Expectations
Consistent	Data should be recorded in a logical and chronological order.	Uniform documentation across systems Clear sequencing of events
Enduring	Data should be securely stored and retained for the required period.	Protection from loss or unauthorized changes Long-term data preservation
Available	Data should be readily accessible when required.	Accessible for monitoring Available for audits Available for regulatory inspections

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