Critical Risk Questions for High-Density Compute Infrastructure

1. What problem does v008-OBSIDIAN actually solve?
v008-OBSIDIAN enforces silicon-safe operating boundaries in real time, at millisecond-scale latency, where cooling systems and telemetry are physically too slow to prevent damage.

2. Why isn't liquid cooling sufficient at high power density?
Liquid cooling reacts on second-scale time constants. v008-OBSIDIAN exists because critical silicon damage mechanisms occur in sub-20ms windows that cooling cannot observe or mitigate.

3. What does "deterministic enforcement" mean in v008-OBSIDIAN?
It means operating limits are enforced predictably and immediately based on physics-derived constraints, not inferred later from averaged sensor data.

4. Where does v008-OBSIDIAN sit in the system stack?
v008-OBSIDIAN operates as a hardware-adjacent enforcement layer, independent of workload software, OS control, or vendor dashboards.

5. How does v008-OBSIDIAN act faster than traditional control loops?
It does not wait for thermal equilibrium or control feedback; it clamps transient behavior at the moment limits are approached.

6. What type of failures does v008-OBSIDIAN prevent?
It prevents cumulative silicon fatigue, micro-delamination, and aging acceleration caused by short, high-energy transients that never appear in steady-state telemetry.

7. Is v008-OBSIDIAN a monitoring system?
No. Monitoring observes violations after they occur. v008-OBSIDIAN enforces boundaries before violations cause irreversible damage.

B. Multi-Tenant & Cloud Risk (Hosted AI / Shared Infrastructure)

8. Why is v008-OBSIDIAN required in multi-tenant environments?
Because tenants control workloads, not hardware. v008-OBSIDIAN enforces non-bypassable physical limits regardless of tenant behavior.

9. How does v008-OBSIDIAN protect against abusive workloads?
It constrains transient power and thermal behavior at the hardware boundary, preventing intentional or accidental stress patterns from accumulating damage.

10. Can v008-OBSIDIAN be bypassed by software or firmware?
No. Its enforcement is independent of tenant software and cannot be overridden by OS-level controls.

11. How does v008-OBSIDIAN support tenant attribution?
It records enforcement events with cryptographically verifiable timestamps that correlate hardware stress to workload execution windows.

12. Does v008-OBSIDIAN require access to tenant code?
No. It operates without inspecting source code or workloads, preserving IP isolation.

C. Warranty, Failure Analysis & Subrogation

13. Why are OEM telemetry logs insufficient for warranty disputes?
They are self-audited, vendor-controlled, and not adversarially trustworthy. v008-OBSIDIAN produces independent enforcement evidence.

14. How does v008-OBSIDIAN change warranty outcomes?
It replaces inference and finger-pointing with objective records showing what limits were enforced and when.

15. What kind of evidence does v008-OBSIDIAN generate?
Tamper-evident, cryptographically chained enforcement receipts suitable for legal and insurance review.

16. How does v008-OBSIDIAN help resolve disputes faster?
By removing ambiguity. Enforcement either occurred or it didn't — the record is deterministic.

17. Can v008-OBSIDIAN distinguish misuse from defect?
Yes. Its records show whether hardware was operated within enforced limits at the time of failure.

D. Insurance & Financial Risk

18. Why do insurers care about v008-OBSIDIAN?
Because insurers require independent proof that operating limits were enforced, not assurances based on monitoring.

19. How does v008-OBSIDIAN enable insurability?
It produces forensic-grade evidence that satisfies underwriting, subrogation, and parametric trigger requirements.

20. What risk does v008-OBSIDIAN reduce for insurers?
Unattributed loss. It converts probabilistic risk into deterministically governed behavior.

21. Why is v008-OBSIDIAN relevant to parametric insurance?
Because parametric policies require deterministic triggers and immutable records — exactly what v008-OBSIDIAN provides.

E. Asset Lifecycle, Fatigue & ROI (CTO / CFO Interface)

22. What is cumulative silicon fatigue and why does it matter?
It is the irreversible damage that accumulates from transient stress over time. v008-OBSIDIAN bounds this accumulation in real time.

23. How does v008-OBSIDIAN affect depreciation models?
It aligns depreciation with actual enforced operating history instead of assumed ideal usage.

24. Why do ROI models fail without v008-OBSIDIAN?
Because silent degradation is not accounted for. v008-OBSIDIAN makes degradation visible and bounded.

F. Facilities, Grid & Systemic Risk

25. How does v008-OBSIDIAN protect facility power infrastructure?
By enforcing rack- and socket-level limits fast enough to prevent upstream breaker or substation trips.

26. Can v008-OBSIDIAN prevent cascading outages?
Yes. It clamps transient draw before it propagates into facility-wide events.

27. How does v008-OBSIDIAN support utility compliance?
It produces auditable evidence that hard power caps were respected continuously.

G. Governance & Finality

28. What makes v008-OBSIDIAN a governance layer rather than a tool?
It enforces rules, records enforcement, and produces evidence — not recommendations.

29. What happens if v008-OBSIDIAN is removed?
Transient behavior becomes unbounded, liability becomes ambiguous, and risk shifts from governed to assumed.

30. Why is v008-OBSIDIAN foundational rather than optional?
Because without deterministic enforcement, high-density infrastructure cannot be proven safe, compliant, or financially defensible.