Natural Hazard Risk Reduction for the Petroleum Industry

Strategic Fit: This project will document how facilities assess natural hazard risk, identify gaps, and develop a screening tool to guide better natural hazard mitigation decisions.

Program Goal: Shift practice from **post-event reaction** to **prevention** by documenting industry risk assessment and decision needs and develop a private, site-specific flood exposure screening tool for company data.

Value Proposition: Reduce future disaster losses through proactive identification of natural hazard risk; minimize operational risk by avoiding external data sharing; and improve decision accuracy by comparing against anonymized industry benchmarks to pinpoint gaps and prioritize upgrades.

Brief Program Description and Expected Deliverables: **Phase 1 (this proposal):**

- Literature review, interview protocol and concurrent survey instrument development
- Data collection from member companies and quantitative and qualitative data analysis
- Draft report of industry needs assessment findings, current practices, common gaps and inefficiencies, priorities, needs.
- Develop generalized risk screening tool to evaluate place-based natural hazard risk.

Phase 1 Estimated Budget: **$120k**

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Future Phases (conditional on Phase 1 findings):

- Phase 2 – Roadmap: framework and roadmap for a structured risk assessment approach (priority systems, thresholds, methods).
- Phase 3 – System-Level Analysis: targeted analysis of high-priority systems (e.g., storage tanks, electrical, control systems).
- Phase 4 – Component-Level Tool: detailed vulnerability assessment tool (e.g., VAP algorithm implementation).
- Phase 5 – Adoption: training and deployment support for industry implementation.

