

CASE STUDY · INVESTOR-OWNED UTILITY

Meridian Power Utility

Cutting Outage Minutes a Third Through Distribution Automation and DERMS

SUMMARY

HydroLabs redesigned Meridian's distribution planning process and implemented a DERMS platform across 40 feeders, reducing customer outage minutes by 31 percent in eighteen months.

31% SAIDI REDUCTION	40 FEEDERS AUTOMATED	-40% AVG. OUTAGE DURATION	18 mo. DEPLOYMENT TIMELINE
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The Problem

Meridian Power Utility, a mid-sized investor-owned utility serving roughly 900,000 customers, was experiencing rising outage minutes despite steady capital investment, driven by aging feeder protection equipment and a distribution planning process that had not kept pace with rapidly growing rooftop solar and EV charging penetration.

Voltage excursions on high-solar feeders were becoming a recurring operational problem, and the utility's existing SCADA and outage management systems provided limited real-time visibility into distributed energy resource behavior at the feeder edge.

Our Solution

HydroLabs conducted a feeder-by-feeder distribution system assessment, prioritizing 40 feeders with the highest combination of outage history and DER penetration for an initial DERMS and automation deployment.

We designed and implemented a DERMS platform integrated with Meridian's existing SCADA and outage management systems, enabling voltage-VAR optimization using smart inverter reactive power capability and coordinated fault location, isolation, and service restoration automation across the prioritized feeders.

A parallel workstream rebuilt Meridian's distribution planning process to incorporate hosting capacity analysis directly into interconnection screening and capital planning, replacing the utility's prior generic screening thresholds.

Timeline

Diagnostic & Feeder Prioritization	6 weeks — data review, feeder scoring, prioritization workshop
DERMS Platform Design & Integration	4 months — architecture, SCADA/OMS integration design, vendor selection support
Phase 1 Deployment (12 feeders)	5 months — automation and DERMS commissioning, control room training

Phase 2 Rollout (28 feeders)

6 months — scaled deployment, hosting capacity process rollout

Performance Review

Ongoing — quarterly outage and hosting capacity performance tracking

Results

- Customer outage minutes (SAIDI) across the 40 prioritized feeders fell 31 percent within eighteen months of full deployment, compared to a 6 percent improvement across the rest of Meridian's service territory over the same period.
- Automated fault location, isolation, and service restoration reduced average outage duration for faults on automated feeders by roughly 40 percent by eliminating manual feeder switching steps.
- Published hosting capacity maps increased developer-visible interconnection capacity on prioritized feeders and reduced average interconnection study turnaround time.

