

BNN POWER · ELECTRICAL RELIABILITY & ENERGY CONSULTING



BNN POWER, MUMBAI

ASSESSMENT SERVICE

INDUSTRIAL POWER RELIABILITY & FAULT IDENTIFICATION

IPRFA — Industrial Power Reliability & Fault Identification Assessment

Investigate the Cause. Not Just the Symptoms.

THE PROBLEM

Many industrial facilities continue experiencing recurring interruptions **despite multiple studies and corrective actions.**

The real challenge is not identifying symptoms. It is identifying the true cause.

ARE YOU FACING THESE?

01

VFDs failure/tripping during utility disturbances

05

Frequent nuisance tripping of protection systems

02

PLCs restarting without apparent reason

06

Repeated failures despite corrective measures

03

Production interruptions from electrical events & unexplained downtime

07

Higher neutral current or Higher Neutral to earth voltage

04

Voltage sag/swell related shutdowns

08

Equipment behaving differently under identical conditions

We Investigate Cause & Effect

Most studies measure electrical parameters. We correlate multiple data layers to answer what happened, why it happened, and how to prevent recurrence.



Utility Grid Events

External disturbances, sags & switching



Equipment Sensitivity

VFD ride-through, PLC tolerance, control power



Protection Behavior

Relay settings, coordination, nuisance trips



Voltage Disturbances

Duration, magnitude & frequency of events



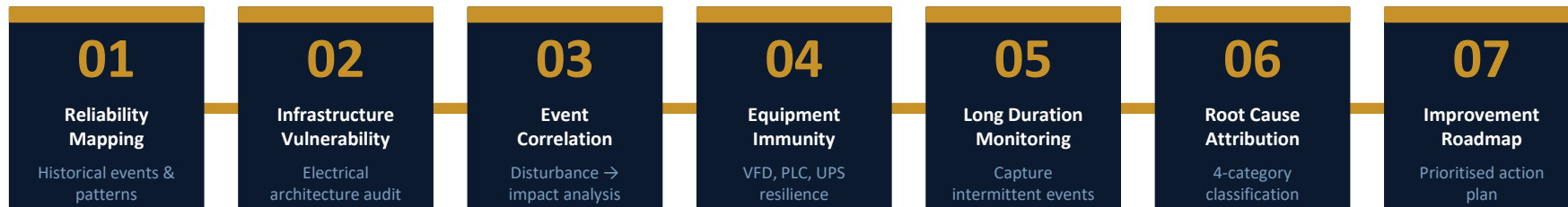
Power Quality

Harmonics, imbalance, transients



Process Impact

Quantified production losses per event



Phase 1–2: Diagnose

- Utility outage records
- Trip & fault history
- SCADA alarms
- HT/LT distribution audit
- Transformer & MCC review

Phase 3–5: Measure

- Disturbance–trip correlation
- Drive vs. non-drive behaviour
- Site resonance condition, Ferranti effect, Tr. circulating current etc.
- Power Quality test
- Long-duration power monitoring

Phase 6–7: Resolve

- 4-category root cause map
- Immediate: VFD & relay settings
- Mid-term: VFD, SERVER, UPS, load split
- Long-term: infrastructure redesign
- Digital monitoring deployment

Every Issue Has an Origin

Each identified issue is classified into one of four attribution categories for unambiguous corrective action.

01

Utility Originated

External Grid Disturbances

Voltage Sags / swell

Utility Switching Events

02

Plant Originated

Internal Faults

Load side power quality Issues

Capacitor Switching Events

03

Equipment Sensitivity

VFD Configuration Issues

Harmonics Interference

Excess cable burden

04

Protection System Issues

Incorrect Relay Settings

Fault current

Nuisance Tripping

Structured Implementation. **Prioritised Actions.**

PHASE A

Immediate Actions

- VFD Parameter Optimization
- Protection Setting Review
- Fault identification
- Power Quality improvement

PHASE B

Medium-Term Improvements

- Dynamic Voltage Restoration (DVR)
- Fault recognition & correction
- Critical Load Segregation & Feeder reconfiguration
- Passive Harmonics Filters installation

PHASE C

Long-Term Reliability

- Infrastructure Modernization
- Reliability Architecture Redesign
- Digital Monitoring Systems
- Continuous Reliability Management

01

Reliability Risk Map

Identification of vulnerable systems, equipment, and feeders across your facility's electrical infrastructure.

02

Disturbance Correlation Analysis

Detailed correlation between electrical events and operational losses with quantified production impact.

03

Root Cause Investigation Report

Technical determination of fault origins and contributing factors with engineering-grade evidence.

04

Monitoring Strategy

Recommendations for continuous monitoring deployment and long-duration event capture protocols.

05

Reliability Improvement Roadmap

Prioritised action plan with phased implementation across immediate, medium, and long-term horizons.

06

Management Summary

Business-focused assessment of operational risks, downtime impact, and reliability improvement opportunities.

SECTORS SERVED

Across all process-critical industrial environments where uptime matters.

Steel & Metals

Pharmaceutical & Research

Cement Plants

Chemical & Petrochemical

INDUSTRIES WE SERVE

Textile Manufacturing

Automotive Manufacturing

Food & Beverage Processing

Data Centers

Commercial & Industrial Facilities

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Industries
Serving Critical
Electrical Infrastructure

Integrated Expertise Across Every Layer



Power Quality Engineering



Electrical System Audits



Reliability Assessment



Harmonic Analysis



Energy & Electrical Resource Management



Root Cause Investigation



Electrical Infrastructure Consulting

Our objective: help facilities improve uptime, reduce operational risk, and enhance production continuity through evidence-based engineering.

WHY IPRFA IS DIFFERENT

Other Studies Measure. We Determine.



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OTHERS DO

Measure power quality parameters – Harmonics High

Identify symptoms – Heating in PCC panel

Short-term snapshot monitoring – 2 or 3 Day Quick assessment

Generic corrective recommendations – Install AHF/SVG

Single-discipline analysis



BNN POWER IPRFA

Correlate events to production losses

Attribute root cause to origin category

Long-duration capture across seasonal cycles

Phased roadmap: 0–3 months to 1–3 years

Cross-layer: utility → protection → equipment → process

NEXT STEP



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Let's Investigate the Cause, Not Just the Symptoms.

Recurring electrical interruptions lead to significant production losses, increased maintenance costs, and operational uncertainty. Partner with BNN Power to identify the true source of electrical reliability issues and build a more resilient power infrastructure.

SCHEDULE A RELIABILITY ASSESSMENT CONSULTATION

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