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RELAY SETTING AND COORDINATION SERVICES & POWER SYSTEM STUDIES

- 🗊 Enhances Electrical System Reliability
- 🗊 Ensures Improved life of Electro mechanical infrastructure
- 🕼 Precise relay setting and coordination using ETAP

INDUSTRY TRENDS & INSIGHTS RELAY SETTING AND COORDINATION

With the advancement of digital technology, It has now increased the complexity and then became necessary to have a "Specialist" in Relay Settings & Coordination. The field of relay setting and coordination is advancing with digital and intelligent relays offering precision and real-time monitoring to enhance system reliability. At LECON Energetics, we excel in configuring these modern relays to optimize protection and efficiency for systems ranging from 415V to 132KV.

Compliance with industry standards is crucial, and LECON ensures all relay settings meet current regulations while adapting to emerging trends. This proactive approach enhances the safety, reliability, and longevity of electrical systems. In today's industrial landscape, grid power from utility and captive power generation work in tandem in many plants making their electrical power system very challenging to manage. Properly set and coordinated relays are essential for seamless power system operation. They protect motor loads, transformers, switchgear, cables, and mechanical systems, extending their lifespan.

LECON provides expert relay setting and coordination services to optimize system protection, minimize downtime, and ensure electrical infrastructure safety. With cutting-edge solutions, we enhance the performance and reliability of your power systems.

Our services include:

Custom Relay Settings: We customize overcurrent, earth fault, short circuit, and other relay settings to match your equipment's specifications, ensuring precise protection.

System Audits: We review your relay settings, offering recommendations to boost performance in line with industry standards.

Short Circuit Analysis: We do Short Circuit Studies for your electrical power system by creating fault scenario at different points of power system in ETAP. And according to the analyzed result, we consider the relay co-ordination and their edge to edge settings.

Coordination Studies: We analyze protective devices to ensure proper sequencing, isolating faults without unnecessary system disruptions.

Compliance with Standards: All settings and coordination adhere to national and international standards for maximum safety and reliability.

Transient Analysis: We perform transient analysis to study the dynamic of your electrical power system under different operating conditions, including faults, sudden load changes & current fluctuations during motor starting. This analysis evaluates the response during critical events and ensures stability to your electrical power system through proper relay co-ordination and settings. Proper relay setting and coordination are essential for maintaining the balance between protecting equipment and ensuring operational continuity. The primary objective is to isolate only the faulty part of the system during an abnormal event, allowing the rest of the system to continue functioning. This targeted approach minimizes the risk of widespread outages and ensures that your operations are not unduly interrupted.

"The key to a resilient electrical system lies in precise relay settings and flawless coordination—Ensures the fault is cleared in minimal and isolated swiftly fault Current Value. while Other Plant operations continue uninterrupted."

Our Expertise

At LECON Energetics, we bring a unique combination of advanced software tools and exceptional engineering proficiency & Vast Field Experience to deliver unmatched relay setting and coordination services. Leveraging industry leading software like ETAP, we conduct detailed relay setting and coordination studies to ensure the safety, reliability, and optimal performance of electrical systems.

The Role of ETAP in Relay Setting and Coordination:

ETAP allows us to accurately model complex electrical networks, simulate fault scenarios, and optimize relay settings for precise and timely protection. With ETAP, we ensure:

Accurate System Modeling: Reflecting real-world conditions for effective analysis.

- Fault Analysis: Identifying and addressing potential issues like short circuits and overloads.
- Optimal Coordination: Guaranteeing sequential operation of protection devices to minimize downtime.
- Compliance with Standards: Adherence to IEC and IEEE guidelines for reliable system protection.

Proficiency in Relay Setting Procedures:

Our team of experienced engineers excels in understanding protection relay characteristics, coordination philosophies, and fault analysis. We specialize in working with digital relays that incorporate multifunctional protection features, ensuring every aspect of system safety is addressed.

PROVEN EXPERTISE IN MOTOR, FEEDER, AND TRANSFORMER PROTECTION.

At LECON, our expertise in motor protection, feeder protection, and transformer protection relay setting and their coordination is unmatched. Our relay settings have been rigorously tested and have consistently protected systems during fault conditions, minimizing damage and preventing costly downtime.

- Motor Protection: We have provided customized relay settings for motors Based on their manufacturing data sheet and load in various industries, ensuring optimal protection against overloads, short circuits, and other potential faults. Our solutions have been proven to enhance motor lifespan and reduce the risk of unexpected failures.
- Feeder Protection: Our achievements in feeder protection relay setting are demonstrated by the flawless operation of systems under our care. By ensuring proper coordination and timely isolation of faults, we have maintained the reliability and safety of electrical distribution networks.
- **Transformer Protection:** We have extensive experience in configuring transformer protection relays to safeguard these critical components. Our settings ensure that transformers are protected from potential damage due to overloads, faults, and other electrical anomalies, thereby enhancing their operational reliability and longevity

RELAY SETTING AND COORDINATION PROCESS

Our process for relay setting and coordination involves several key steps:

- Data Collection: We begin by gathering detailed information on the electrical characteristics of your motors, transformers, and other critical equipment. This includes factors such as load characteristics, motor starting profiles, and thermal ratings.
- **Protection Scheme Design:** Based on the collected data, we design a protection scheme that balances the need for system protection with the operational requirements of your facility.
- Testing and Validation: We perform rigorous testing to validate the relay settings and coordination, ensure that all devices operation as intended during fault conditions.
- **Relay Configuration:** We configure the relays to ensure they provide the correct level of protection, adjusting settings such as pickup levels, time delays, and coordination curves.
- **Documentation and Reporting:** Finally, we provide comprehensive documentation, including relay setting sheets, coordination study reports, and a detailed analysis of the system's protection perfor mance

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			Protect	ive Device Sett	tings - Lov	v Voltage	Circuit Break	r with Sol	id State / I	Microprocess	or Trip De	vice		_		
	0	LVCB ID	Breaker Manufacturer & Model	Trip Device Model	Sensor/ Fram	Rating Plug	Function	Long Time Pickup Delay			Short-Time		/ Ground		Inst. / Maintenanc	
	Substation ID							Setting	Trip (Ampt'	Band	Setting	Trip (Ampt')	Band	ri,	Setting	Trip (Amps
	SGR 104-0	CB 104-0B	General Electric AKR-50	MVT-Plus (AKR LVPCB)	1600 (LSIG)	1600	Phase	0.95	1520	4	3	4560	Min	олт	5	8000
	SGR 104-0	CB 104-0A	General Electric AKR-50	MVT-Plus (AKR LVPCB)	1600 (LSIG)	1600	Phase	0.95	1520	4	3	4560	Min	оит	5	8000
	SUB 2A	CB 109-3D	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Int	IN	5	4000
	SUB 2A	CB 109-3C	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Int	IN	5	4000
	SUB 5	CB 109-3A	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	4	2560	Int	IN	7	5600
	SUB 5	CB 109-3B	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	3	5	3200	Max	IN	5	4000
	SUB 10B	CB 109-3 S	General Electric AKR-75	RMS-9 (LVPCB)	3200 (LSIG)	3200	Phase	0.8	2560	3	3	7680	Min	олт	5	16000
	SGR 109-4	CB 109-4B	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Int	IN	5	4000
	SGR 109-4	CB 109-4C	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Int	IN	9	7200
	SGR 109-4	CB 109-4D	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Min	IN	5	4000
	SGR 109-4	CB 109-4A	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	3	1920	Int	IN	5	4000
	SGR 109-4	CB 109-4 S	General Electric AKR-75	RMS-9 (LVPCB)	3200 (LSIG)	3200	Phase	8.0	2560	3	3	7680	Min	олт	5	16000
	SGR 109-2	CB 109-2C	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	4	2560	Int	IN	5	4000
	SGR 109-2	CB 109-2D	General Electric AKR-30H	RMS-9 (LVPCB)	800 (LSIG)	800	Phase	0.8	640	2	4	2560	Int	IN	5	4000
ľ	SGR 109-2	CB 109-2A	General Electric	RMS-9	800	800	Phase	0.8	640	2	4	2560	Int	IN	5	4000







Why Choose Us?

At LECON, we have a proven track record of delivering highquality relay setting and coordination services across various industries. Our experienced engineers are well-versed in the latest technologies and industry standards, allowing us to provide solutions that are both reliable and cost-effective.

One of our key strengths lies in our ability to work with relays from any manufacturer like ABB, Siemens, Schneider, GE etc,. Thanks to our deep expertise and comprehensive understanding of a wide range of relay systems, we can seamlessly integrate, configure, and coordinate relays regardless of their origin. This flexibility ensures that your electrical systems are protected by the most advanced and well-coordinated relay settings available, minimizing the risk of unexpected downtime and maximizing the lifespan of your critical equipment available,

By choosing LECON, you can be confident that your system is in the hands of professionals who are capable of delivering tailored solutions that meet your specific needs, ensuring the safety, reliability, and efficiency of your operations.

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Next Steps

We would be delighted to discuss how our relay setting and coordination services can add value to your operations. Please do not hesitate to contact us to schedule a consultation or to learn more about our services.



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