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	STANDARD: **OSHA 29 CFR 1910.303 / NFPA 70 (NEC) / NFPA 70E**	AUDIT FREQUENCY: **Monthly Pre-Season & Operational Audit**

Farm Irrigation Pump Electrical Inspection Sop Template

Operational Scope: This Standard Operating Procedure establishes mandatory electrical safety inspection protocols for all agricultural irrigation pump installations. The objective is to mitigate arc flash hazards, electrical shock, and equipment failure while ensuring full compliance with OSHA electrical safety standards.

MANDATORY PPE:	Electrical Safety Glasses (ANSI Z87.1), Dielectric Rubber Insulating Gloves with Leather Protectors, Arc Flash Face Shield (NFPA 70E compliant), ASTM-rated Electrical Hazard (EH) Steel-Toe Boots, Flame-Resistant (FR) Long-Sleeve Shirt and Pants
PREREQUISITES:	Verify proper Lockout/Tagout (LOTO) isolation of the main power supply before opening panels. | Ensure weather conditions are dry and non-precipitating prior to exterior cabinet inspection. | Inspect all test instruments (multimeter, non-contact voltage tester) for calibration and CAT III/IV rating.

1. EXTERNAL POWER SUPPLY & CONTROL PANEL INSPECTION

#	COMPONENT / ITEM	VERIFICATION CRITERIA & ACCEPTANCE STANDARD	SEVERITY	STATUS
1	**Main Enclosure Cabinet**	Cabinet door is securely latched, gasket is intact, and NEMA/IP rating is uncompromised to prevent moisture ingress.	**Warning**	**[ ] PASS [ ] FAIL [ ] N/A**
2	**External Warning Signage**	'Danger: High Voltage' and arc flash hazard labels are visibly posted on the exterior of the control enclosure.	**Standard**	**[ ] PASS [ ] FAIL [ ] N/A**
3	**Padmount & Conduit Integrity**	Incoming rigid or flexible conduit is securely fastened, free of cracks, and weather-sealed at all entry points.	**Warning**	**[ ] PASS [ ] FAIL [ ] N/A**
4	**Emergency Stop (E-Stop) Switch**	Push-button E-stop mechanism engages cleanly, locks down when depressed, and interrupts control power instantly.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**

2. INTERNAL WIRING, CIRCUIT PROTECTION & GROUNDING

#	COMPONENT / ITEM	VERIFICATION CRITERIA & ACCEPTANCE STANDARD	SEVERITY	STATUS
5	**Grounding and Bonding**	Equipment grounding conductor and earth ground rod connection are tight, corrosion-free, and unbroken.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**
6	**Circuit Breakers & Fuses**	Overcurrent protection devices match motor full-load amps (FLA) rating with zero evidence of thermal discoloration or soot.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**
7	**Magnetic Motor Starter & Contacts**	Contactor contact points show no severe pitting, welding, or excessive carbon buildup; coil operates without excessive hum.	**Warning**	**[ ] PASS [ ] FAIL [ ] N/A**
8	**Terminal Block Connections**	All internal screw and lug terminals are torqued to manufacturer specifications, showing no signs of loose wires or thermal stress.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**

3. PUMP MOTOR & FIELD WIRING VERIFICATION

#	COMPONENT / ITEM	VERIFICATION CRITERIA & ACCEPTANCE STANDARD	SEVERITY	STATUS
9	**Submersible / Surface Motor Lead Cable**	Motor power leads are free of abrasions, cracking, or exposure; waterproof splices are intact and fully submerged or protected.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**
10	**Motor Insulation Resistance (Megger Test)**	Megohm meter reading meets or exceeds minimum manufacturer threshold for motor winding insulation integrity.	**Critical (Immediate Out of Service)**	**[ ] PASS [ ] FAIL [ ] N/A**
11	**Lightning & Surge Arrestor**	Surge protection device (SPD) status indicator confirms functional operational state with no blown internal modules.	**Warning**	**[ ] PASS [ ] FAIL [ ] N/A**

Certified Electrical Inspector / Lead Farm Technician Signature: _____	**Date / Time:** _____	**Badge / Cert #:** _____
Site Safety Supervisor / Operations Manager Sign-off: _____	**Review Date:** _____	**Audit Status:** [ ] Approved [ ] Rectify

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