Calculation Instructions for Cleaning Operation of Single DJI T50 on 1MW Photovoltaic Power Station

I. Basic Parameters

1. Photovoltaic area: A total of 4,500 m² for 1 MW of photovoltaic panels
2. Cleaning equipment: DJI T50; standard spray water tank capacity: 40L
3. Operating Standard: Each water tank shall be evenly sprayed in the air for 4 minutes; the cleaning capacity per tank is 70 m².
4. Total Operation Tasks: 4500 ÷ 70 ≈ 65 tasks
5. Water Accounting

   Total water consumption: 65 × 40 = 2,600 L

   Average water consumption per unit area: 2600 ÷ 4500 ≈ 0.578 L/㎡

II. Standard Dual-Person High-Efficiency Work Plan

Essential supporting configurations (ensures completion within 5–6 hours)

1. Personnel: A 2-person crew consisting of 1 professional pilot and 1 full-time ground operator; water refilling and battery replacement are performed in a synchronized sequence, ensuring no idle waiting periods throughout the entire process;
2. Water supply conditions: The water supply truck or reservoir shall be stationed at the nearest landing point, eliminating the need for long-distance pipeline installation to transport water and ensuring continuous operation;
3. Battery Configuration: Equipped with 6 sets of fully charged batteries; allows for rapid plug-and-play battery replacement without requiring on-site charging;

4. Rest schedule: Two operators will take turns resting; the drone will continue its operations, with a unified short rest period of 15 minutes throughout the day.

Single-box labor hour loss standard

1. Dedicated personnel for rapid water addition: 2 minutes per box;
2. Rapid battery replacement: 4 minutes per battery change.

Construction duration float range

The site is contiguous and well-organized, with ideal water supply locations: completion in approximately 5 hours;

The photovoltaic installation is decentralized, requiring only minimal relocation of water supply equipment; the overall construction duration does not exceed 6 hours, making it fully compatible with standard daytime construction schedules.

III. Summary of Core Data

1. Total water consumption for one complete- cycle cleaning of the entire 1 MW photovoltaic power station is 2600 liters.
2. The average water consumption per square meter of countertop surface is 0.578 liters/㎡;
3. For the dual-person standard operational setup, the cleaning time for a 1 MW photovoltaic power station is stably controlled within 5–6 hours.