Company: Southern Power Company, Birmingham, AL
Company Description: Southern Power, a Southern Company subsidiary, owns or operates 55 facilities across 15 states, totaling over 13,150 MW of capacity, including 5,280 MW from renewables like solar and wind. We serve municipalities, cooperatives, and utilities through long-term contracts with investment-grade partners.
Nomination Category: Individual Categories
Nomination Sub Category: Rising Star of the Year
Nomination Title: Drumil Joshi, the AI Sentinel of Renewable Power

1. Provide an essay of up to 650 words describing the worthy activities and achievements of the nominated individual since the beginning of 2023:

   Total 479 words used.

   When 24-year-old **Drumil Joshi** took charge of Southern Power's monitoring desk in May 2024, the control room sounded like a carnival: 50+ solar, wind, and battery sites worth nearly **half a billion dollars** generated thousands of alerts, 6% of which were proven to be incorrect. Rather than mute the chaos, he rewired it. **Four years of ten-minute SCADA and weather data, totaling almost 2 terabytes, were uploaded to Azure Databricks; from this, a CatBoost machine learning model emerged, verified with SHAP, which** now predicts ice on turbine blades with **88% accuracy**. Winter ended with **zero cracked blades**. He then borrowed information-theory tools to tame battery volatility, blending real-time voltage entropy with weather vectors to create an **Operational Stability Index** that warns operators minutes before oscillations erupt, slashed nuisance alarms by a quarter, and saved about 200K USD across three avoided deratings. A self-healing **Python pipeline sweeps 20,000 historian tags** nightly, issues a colour-graded **Data Health Score** for every turbine, and has already lifted fleet availability by **2.4 percentage**, roughly **3600 extra megawatt-hours** of carbon-free power.

   Joshi's code is only half the story; the other half is knowledge that travels. Since January 2023, he has published **12 peer-reviewed research papers with 300+ citations, 3 book chapters, and a 300-page textbook,** *Machine Learning Essentials and Applications*, now dog-eared by 9 internal teams. Patent offices have stamped **5 Indian software copyrights and 2 UK design grants with his name**, covering an AI-enabled agricultural camera and a solar-powered air-quality monitor. His Hindustan Times column on the renewable backbone behind hyperscale data centres reached more than **100M readers**, while **NDTV International panels** pull a million viewers each and cast him as an "AI & Data Science Expert". Drumil Joshi has been interviewed in **Silicon India, Authority Magazine, Financial Express, and TechBullion** which echo his conviction that code can cut carbon, and **Analytics Insight - World's First Print AI Magazine lists him among the Top 10 Influential Data-Science Leaders to Follow in 2025.**

   True rising stars leave the door open behind them. Joshi serves on editorial boards for **10 scientific journals**, has reviewed more than **100+ manuscripts for titles such as** *IEEE Transactions on Artificial Intelligence*, and **mentors students from minority-serving institutions through the eCybermission challenge.** He even open-sourced his **Tableau dashboards** so **small municipal utilities** can interrogate their data without buying expensive software. In **August 2025,** he will unveil the public release of his Operational Stability Index and a lost-energy-aware outage scheduler at **PVPMC, PVSC, and the Vibration Institute Technical Conference,** each backed by **U.S. agencies,** and by 2026, he plans to package his fleet-health engine as an Azure Marketplace application. In just eighteen months, **Drumil Joshi** has turned noisy telemetry into silent reliability, research into rulebooks, and media soundbites into science lessons for millions proving that Gold-level performance doesn't wait for permission, it writes the future in clean megawatts.

2. In bullet-list form (up to 150 words), provide a brief summary of up to ten (10) of the nominee's chief achievements since 1 January 2023:

   Total 117 words used.

   - Boosted fleet availability by **2.4%**, adding **3600 MWh** of clean power each year.
   - Ice-formation model lifted detection accuracy from **73 % to 88 %**, eliminating winter blade cracks.
   - Invented **Operational Stability Index**, averting three battery deratings and saving about **US$ 200 K**.
   - Built self-healing ETL scoring **20,000** tags; freed engineers **25 hours** every week.
   - Published **12 peer-reviewed papers**, **3 book chapters**, and a 300-page machine-learning textbook.
   - Secured **5 AI copyrights** and **2 UK design grants** for breakthrough clean-tech devices.
   - Hindustan Times column reached **100 million** readers; NDTV panels draw **1 million** viewers each.
   - Named **Top-10 Data-Science Leader to Watch 2025** by Analytics Insight.
   - Reviewed **100+** manuscripts, serves on **10+** editorial boards, mentors under-represented STEM interns.

Attachments/Videos/Links:

[Drumil Joshi, the AI Sentinel of Renewable Power](#)

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