



SUCCESS STORY

CALIFORNIA ISO

INDJI WATCH HELPS CALIFORNIA ISO KEEP THE LIGHTS ON IN CALIFORNIA, EVEN WHEN EXTERNAL HAZARDS THREATEN THE SYSTEM. INDJI WATCH REPORTS ON POTENTIAL HAZARDS AS THEY DEVELOP, GIVING ISO THE TIME THEY NEED TO ACT.

California ISO

The California Independent System Operator (ISO) is a non-profit corporation charged with operating the majority of California's high-voltage wholesale power grid. While utilities still own transmission assets, the ISO acts as a traffic controller, routing electrons, maximizing the use of the transmission system and its generation resources, and supervising maintenance of the lines. As the nerve center for the California power grid, the ISO matches buyers and sellers of electricity, facilitating nearly 30,000 market transactions every day to ensure enough power is on hand to meet demand.

The ISO keeps a pulse on an estimated 55,000 megawatts of capacity from more than 1,400 power plant units connected to over 25,000 circuit miles of transmission lines serving the electricity needs of 30 million consumers. Their able management of this complicated market is what makes them a worldwide leader in the utilities industry.



The Problem

Before Indji Watch, the California ISO mostly dealt with hazards in a reactive manner, because they only found out about hazards after they had caused a problem. For example, a utility would call ISO and tell them that a line had lost power due to a fire burning under it, or a power plant on the coast had been derated due to problems with the cooling water input.

- Dealing with problems in a reactive manner meant more expensive power – the ISO had to buy what was available at very short notice.
- They experienced decreased overall system stability when the network was forced to cope with the loss of many elements without warning.
- ISO staff used several different systems to track different hazards, eg, fire, weather, earthquakes. The staff then had to manually download data and load it into internal systems.
- It was difficult to rapidly pinpoint the exact location of a utility line on a map while trying to analyze possible contingencies at the same time, especially because they were working with a schematic display of the system instead of exact coordinates.

“Fires start small and escalate. Indji Watch notifies our operators early so we can evaluate contingencies and communicate action plans well before equipment fails or is taken out of service.”

– Brian Murray, Grid Operations, California ISO

The Solution

Indji Watch is a location-based monitoring system that delivers real-time analysis of potential hazards that may affect utilities. Indji Watch automates labor-intensive manual tracking processes by providing convenient, web-based access to timely, consistent, and detailed information about external hazards as they change and develop.

The system seamlessly brings together a range of third party information feeds into a single user interface. It provides a real-time view of hazards in relation to the location of assets and people by:

- Automatically determining in real-time when assets and threats are in geographic proximity to one another. For the California ISO, Indji Watch tracks the movements of external hazards such as wildfires, ocean swells, earthquakes, lightning strikes and weather warnings to determine which assets may be threatened based on their location.
- Automatically generating early warning notifications to asset owners. Warnings can be received by the ISO via email, SMS, pager, fax, telephone call, or instant messaging. Indji Watch can also provide warnings in the form of direct data feeds into third party management systems.
- Logging all interaction of threats and assets for audit and regulatory compliance purposes.

Indji Watch provides the early warning information required to effectively manage risk, bringing all the data together in one user-friendly, web-based location. Indji Watch provides an information service, where none existed before; a key tool in reducing the risk of damage from dangerous and sometimes devastating hazards such as wildfires and high swells.

Our Solution in Practice

Indji Watch currently monitors a variety of hazards for the ISO, including wildfires and high swells off the Southern California coast. Stringent rules based on best business practices ensure that the California ISO only receives warnings that are relevant to their operations.

“With Indji Watch, we went from being reactionary to being proactive in terms of natural events and the threats they pose to the power system. This is a huge plus for our operation.”

– Brian Murray, Grid Operations, California ISO

What this means:

- The ISO receives warnings in time to take action.
- Moving from reactive mode to proactive mode allows an operator to look at contingencies in the event of loss of a network element. Even a few minutes' notice allows operators to run a "what if" power flow simulation that shows how a newly reported fire near a line will affect the system.
- An automatic monitoring process runs continually to ensure that operators only have to deal with "real" issues. They don't get any noise from hazards that are not likely to affect infrastructure.
- Thanks to Indji Watch's Software as a Service model, no effort from ISO is required to maintain the system. Staff hours are saved compared with the previous hazard monitoring model, and action is taken more quickly and effectively in the face of a real hazard.

After working with Indji Watch for more than a year, California ISO has noticed a big difference in the way they allocate resources and address potential threats to the system.

