**RESILIENT SOCIETIES FINDS 102 ELECTRIC UTILITY SITES THAT MONITOR SOLAR STORMS;**
**NEW GRID RELIABILITY STANDARD EXEMPTS DATA SHARING TO PROTECT GRID EQUIPMENT**

NASHUA, NH—August 19, 2014—The Foundation for Resilient Societies has released newly discovered information showing that owners of 102 solar storm monitoring stations are exempted from sharing storm readings with electric grid supervisors. As a result, the electric grid could collapse during a severe solar storm because protective action will be unworkable or too late. In addition, harmful currents induced by solar storms could destroy or damage hard-to-replace high voltage transformers, preventing rapid electric grid restoration.

Data compiled by Resilient Societies and a map produced by Storm Analysis Consultants filed with the Federal Energy Regulatory Commission (FERC) shows the location and ownership of 102 monitors used by electric utilities to gauge solar storm impacts on grid operations. (See attachments to this press release.) During severe solar storms, these monitors indicate which high voltage transformers are stressed and may catastrophically fail by fire and explosion. In FERC's Order 797, issued in June 2014, electric utilities were exempted from any duty to install solar storm monitoring equipment or to share collected storm data. In an emergency, the President would lack timely information to prudently de-energize vulnerable grid equipment.

A series of 2010 reports produced by the Oak Ridge National Laboratory concluded, "The cost of damage from the most extreme solar event has been estimated at $1 to $2 trillion with a recovery time of four to ten years, while the average yearly cost of installing equipment to mitigate an EMP event is estimated at less than 20 cents per year for the average residential customer." In March 1989, a moderate solar storm blacked out the province of Quebec, Canada and caused $2 billion in economic losses according to Zurich Insurance.

FERC is the lead federal agency charged with ensuring electric grid reliability. The North American Electric Reliability Corporation (NERC), a private corporation headquartered in Atlanta, Georgia, is the organization designated by FERC to write and enforce grid reliability standards for all of the continental United States.

"It's incredible that electric grid supervisors can 'fly blind' through solar storms and that FERC has blessed this imprudent practice," said Thomas Popik, chairman of Resilient Societies. "This is the equivalent of saying that air traffic controllers can direct commercial airliners during thunderstorms without using wind speed readings from local airports."

Despite existing legal authority, the FERC Commissioners have also declined to request data from electric utilities which could be used to predict the strength of severe solar storms. Using the small amount of public data available, independent scientists have estimated that NERC's benchmark for severe solar storms is too low by a factor of 2 to 5.

Resilient Societies calls on the FERC Commissioners to reconsider their decision to exempt electric transmission and generation operators from mandatory collection of data on harmful currents induced in high voltage lines and to not require sharing of this data with the sixteen regional supervisors for grid reliability. For full text and additional graphics, see FERC Dockets RM14-1-001 and RM14-1-000, also found at www.resilientsocieties.org. Follow us on Twitter @ResilientGrid.

For interviews, contact William Harris at williamh@resilientsocieties.org, 978-255-2203.

# Location and Ownership of Solar Storm Monitors within United States in 2014

| State Name | Utility Name | Balancing Authority | Generator Operator | Monitor Count |
|---|---|---|---|---|
| Alabama | Southern Company | Yes | Yes | 1 |
| Alabama | Tennessee Valley Authority | Yes | Yes | 2 |
| Arizona | Salt River Project | Yes | Yes | 1 |
| California | LA Department of Water and Power | Yes | Yes | 1 |
| California | Southern California Edison | | Yes | 1 |
| Connecticut | United Illuminating Company | | | 4 |
| Idaho | American Electric Power | | Yes | 1 |
| Idaho | Bonneville Power Administration | Yes | | 1 |
| Idaho | Idaho Power | Yes | Yes | 5 |
| Illinois | Ameren | Yes | Yes | 1 |
| Illinois | Exelon/ComEd | | | 3 |
| Illinois | MidAmerican Energy | Yes | Yes | 1 |
| Indiana | American Electric Power | | Yes | 4 |
| Indiana | Duke Energy | Yes | Yes | 1 |
| Iowa | Western Area Power Administration | Yes | | 1 |
| Kansas | Kansas City Power & Light | | Yes | 1 |
| Kentucky | Tennessee Valley Authority | Yes | Yes | 1 |
| Maine | Central Maine Power | | | 1 |
| Maryland | Exelon/Baltimore Gas & Electric | | | 2 |
| Maryland | Exelon/PECO | | Yes | 1 |
| Maryland | FirstEnergy | | Yes | 2 |
| Michigan | American Transmission Company | | | 2 |
| Mississippi | Tennessee Valley Authority | Yes | Yes | 1 |
| Montana | Bonneville Power Administration | Yes | | 1 |
| New Hampshire | NextEra | | Yes | 1 |
| New Jersey | FirstEnergy | | Yes | 1 |
| New Jersey | PSEG | | Yes | 1 |
| New York | Con Edison | | Yes | 4 |
| New York | National Grid | | | 1 |
| New York | New York Power Authority | | Yes | 7 |
| North Carolina | Duke Energy | Yes | Yes | 1 |

## Location and Ownership of Solar Storm Monitors (Continued) within United States in 2014

| StateName | Utility Name | Balancing Authority | Generator Operator | Monitor Count |
|---|---|---|---|---|
| Ohio | American Electric Power | | Yes | 2 |
| Ohio | FirstEnergy | | Yes | 2 |
| Oregon | Bonneville Power Administration | Yes | | 4 |
| Pennsylvania | Exelon/PECO | | Yes | 4 |
| Pennsylvania | FirstEnergy | | Yes | 3 |
| Rhode Island | National Grid | | | 1 |
| Tennessee | Tennessee Valley Authority | Yes | Yes | 4 |
| Texas | Centerpoint | | | 2 |
| Virginia | American Electric Power | | Yes | 1 |
| Virginia | Dominion (VA Electric & Power) | | Yes | 7 |
| Virginia | FirstEnergy | | Yes | 1 |
| Virginia | LG&E and KU | Yes | Yes | 1 |
| Washington | Bonneville Power Administration | Yes | | 6 |
| West Virginia | American Electric Power | | Yes | 1 |
| West Virginia | FirstEnergy | | Yes | 3 |
| Wisconsin | American Transmission Company | | | 3 |
| Wisconsin | NextEra | | Yes | 1 |
| **Total** | | | | **102** |

## Location and Effective Instrumentation Range of Solar Storm Monitors in 2014