

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

<b>Reliability Standard for</b>	)	
<b>Transmission System Planned Performance</b>	)	<b>Docket No. RM15-11-000</b>
<b>for Geomagnetic Disturbance Events</b>	)	

**MOTION AND AMENDED PETITION OF THE FOUNDATION FOR RESILIENT SOCIETIES**

Submitted to FERC on September 29, 2015 Relating to  
NERC-Filed Reply Comments (filed Sep. 23, 2015) and U.S. Department of Energy-Released Los Alamos Report on Proposed Reliability Standard TPL-007-1 (publicly released on Sep. 23, 2015),  
and filed with this Motion to Accept both Filings and  
to establish a 20-Day Public Reply Comment Period in Docket RM15-11-000.

**Introduction**

Pursuant to the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) Notice of Proposed Rulemaking (“GMD NOPR”) issued on May 16, 2015,<sup>1</sup> the Foundation for Resilient Societies (“Resilient Societies”) respectfully amends its Petition of September 10, 2015 seeking that the Commission grant an extension of time for, and accept in Docket RM15-11-000, the filing by Resilient Societies of the U.S. Department of Energy (DOE)-sponsored report by Los Alamos National Laboratory (hereafter “LANL Report”). This LANL Report by Messrs. Rivera and Backhaus reviewed the NERC Benchmark GMD Model in proposed Reliability Standard TPL-007-1 of the North American Electric Reliability Corporation (NERC). The LANL Report was publicly released by the U.S. Department of Energy on September 23, 2015, well after the Supplemental Comment deadline of September 10, 2015 for FERC Docket No. RM15-11-000.

On September 23, 2015 NERC entered a late-filed Reply Comment in response to timely comments submitted by John G. Kappenman, Storm Analysis Consultants and Curtis Birnbach,

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<sup>1</sup> *Reliability Standard for Transmission System Planned Performance for Geomagnetic Disturbance Events*, Notice of Proposed Rulemaking (NOPR), 151 FERC ¶ 61,134 (May 14, 2015) (“GMD NOPR”), 80 FR 29990 (May 26, 2015).

Advanced Fusion Systems (collectively, “Kappenman & Birnbach”) during the comment period ended September 10, 2015. Docket RM15-11-000 has no provision for late-filed Reply Comments.

Resilient Societies by Motion respectfully requests that the Commission order a 21-Day Public Reply Comment Period for comments on the LANL Report and NERC Reply Comments.

## **Background**

Following the July 27, 2015 deadline for the filing of Comments on the Commission’s Notice of Proposed Rulemaking, NERC filed with the Commission on August 17, 2015 the “Level 2 Appeal” Decision of a Subcommittee of the Board of Trustees.<sup>2</sup> NERC did not, however, file the Transcript of the June 29, 2015 Level 2 Appeals Hearing; Resilient Societies separately filed the NERC-prepared Transcript. Three days after NERC filed the NERC Level 2 Appeals decision in this Docket, the Secretary of the Commission on August 20, 2015 issued a “Notice Setting [a Supplemental] Comment Period”:

On August 17, 2015, the North American Electric Reliability Corporation (NERC) filed in the above-captioned docket a NERC appeal panel’s decision addressing the Foundation for Resilient Societies, Inc. “Level 2 Appeal” regarding the development of proposed Reliability Standard TPL-007-1 (Transmission System Planned Performance for Geomagnetic Disturbances). Comments regarding the Level 2 Appeal decision are due within 21 days of this notice.

In timely-filed Comments of September 10, 2015<sup>3</sup>, Resilient Societies petitioned FERC to place into the public record of FERC Docket RM15-11-000:

1. The Briefing Viewgraphs provided to FERC Commissioners and/or FERC Staff by a team of scientists employed by the Los Alamos National Laboratory who in the Spring of 2015 briefed FERC Commissioners and/or FERC Staff on the geophysical modeling of

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<sup>2</sup> See FERC Submittal 20150817-5285, “Conclusion of Standard Process Appeal ...Transmission System Planned Performance for Geomagnetic Disturbance Events”.

<sup>3</sup> Resilient Societies’ Supplemental Comments on NERC Level 2 Appeal .... Docket RM15-11-000 Submittal 20150910-5159, September 10, 2015.

geomagnetic disturbances as these phenomena impact the North American electric grid; together with

2. Any resulting report to the Office of Energy Supply and Electric Reliability (DOE) prepared circa June-July 2015 by a team at Los Alamos National Laboratory headed by Dr. Scott Backhaus that modeled the geophysics of geomagnetic disturbances upon the electric grid of North America; together with:
3. Anonymized peer reviews of the Los Alamos Report on GMD impacts upon the North American electric grid.”<sup>4</sup>

In its September 10, 2015 comments, Resilient Societies asked:

Why is it in the public interest that the Los Alamos Report be placed into this FERC Docket?

First, the electric reliability standard development process is intended to be open, transparent, and balanced.

Second, upon our information and belief, the Los Alamos National Laboratory research team may have identified a fundamental defect in the modeling done by the NERC Standard Drafting Team: specifically, the Benchmark GMD Event which uses a linear *alpha factor* may be in serious error and may significantly underestimate geoelectric fields at lower latitudes.

On September 10, 2015 U.S. Senators Edward J. Markey and Corey A. Booker submitted comments in Docket RM15-11-000 seeking, *inter alia*, inclusion in FERC Docket RM15-11-000 of the LANL Report.<sup>5</sup> Filing in of the LANL Report in FERC Docket RM15-11-000 would partially fulfill the September 10<sup>th</sup> Petition of Resilient Societies and requests of Senators Markey and Booker.

What are the implications for public policy, if the NERC Benchmark GMD Event model is fundamentally flawed, and not validated by empirical data? In its September 10, 2015 Petition, Resilient Societies proposed:

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<sup>4</sup> Resilient Societies’ Supplemental Comments of September 10, 2015, at pp. 6-7.

<sup>5</sup> See Senator Edward Markey et al comments of September 10, 2015, received by the FERC Secretary September 15, 2015, and filed in Docket RM15-11-000 on September 23, 2015, submittal 20150923-0031.

First, FERC may need to remand the NERC Benchmark GMD Event model for a fresh data collection and modeling effort.

Second, if the NERC Benchmark GMD Event model systematically underestimates the magnitude of the 1 in 100 year solar storm, the NERC model -- without a total remand – will result in under-investment in necessary protections so the U.S. electric grid can promptly recover from a severe solar geomagnetic storm.

Third, if the NERC Benchmark GMD Event model results in limited or virtually no hardware protection for GMD hazards in the United States, this will have the unintended effect of creating major and needless barriers to protecting the U.S. electric grid from the hazards of man-made high altitude electromagnetic pulse (HEMP). Even if it is not FERC's goal to develop geomagnetic disturbance standards that protect from man-made EMP hazards, FERC should not adopt an arbitrary, capricious, unscientific GMD standard that will needlessly undermine deterrence of threats or actual employment of EMP weapons by potential foreign adversaries.

Unfortunately, the LANL Report and the NERC Benchmark GMD Event both have geoelectric field models not validated by real-world data from electric transmission lines and telecommunications cables. The public should have the right to comment on this significant shortfall.

### **Amended Petition of Resilient Societies and Motion requesting that the Commission establish a 21 Day Reply Comment Period.**

Pursuant to the Commission's Rules and Practice and Procedures, Rule 212 (Motions, 18 CFR §385.212), Rule 207 (Petitions, 18 CFR §385.207), Rule 907 (New Facts and Issues, 18 CFR §385.907), Rule 2008 (Extension of Time, 18 CFR § 385.2008), Resilient Societies amends its Petition to request timely acceptance and inclusion in Commission Docket RM15-11-000 of both:

1. Reply Comment of the North American Electric Reliability Corporation, responding to Comments of Messrs. Kappenman and Birnbach, in a late-filed Comment/Answer by NERC filed at FERC on September 23, 2015; and

2. LANL Report by Michael Rivera and Scott Backhaus, Review of the GMD Benchmark Event in TPL-007-1.<sup>6</sup> Los Alamos, NM: LANL, September 14, 2015, 26 pp. (Submitted as an attachment to this Petition and Motion.)

Resilient Societies now makes a Motion for the Commission to accept as decisional-related documents both the NERC filing of September 23, 2015, and the Los Alamos National Laboratory Report of September 14, 2015, as publicly released on September 23, 2015; and to open a 21-day period for Reply Comments with respect to the significance of these documents in relation to prior Docket filings for the adequacy, inadequacy, and alternatives to proposed Reliability Standard TPL-007-1.

Reasons for “good cause” include consideration of technical issues relating to acceptance, disapproval, or partial acceptance and partial remand of the NERC proposed Standard TPL-007-1. In particular, the recent availability of these documents raise important issues regarding:

1. The exclusion from both the NERC Benchmark GMD Event and the LANL Report of measured magnetometer data for major geomagnetic solar storms that occurred in August 1972, July 1982, and March 1989.
2. The exclusion of measured Geomagnetically Induced Current (GIC) data for power transmission lines and telecommunications cables that might validate or invalidate geoelectric field models in both the NERC Benchmark GMD Event and the LANL Report.

While the federal rulemaking process is required by law to be open and transparent, the repeated consideration by FERC of technical materials and analyses withheld from the FERC Docket, and withheld from the public comment process, has been arbitrary and capricious, and has caused harm to the public interest. By allowing a public comment period as requested herein, the Commission has the opportunity to partially remedy these procedural shortfalls.

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<sup>6</sup> Los Alamos National Laboratory Report LA-UR-15-25609, September 14, 2015, publicly released via the website of the Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy, September 23, 2015.

Respectfully submitted by

A handwritten signature in black ink that reads "Wm. R. Harris". The signature is written in a cursive style with a large, prominent 'W' and 'H'.

William R. Harris

Secretary

The Foundation for Resilient Societies

52 Technology Way

Nashua, NH 03060

[www.resilientsocieties.org](http://www.resilientsocieties.org)

[williamh@resilientsocieties.org](mailto:williamh@resilientsocieties.org)