

# Electromagnetic Pulse Working Group Scope

## Background

A 2019 technical report<sup>1</sup> from the Electric Power Research Institute (EPRI)<sup>2</sup> outlined threats to reliability posed by a high-altitude electromagnetic pulse (HEMP) attack. The report assessed vulnerabilities and risks and made mitigation recommendations in addition to laying the groundwork for the technical basis to develop for various analyses, guides, and or assessments.

To address research findings from the EPRI report, NERC's Board of Trustees established the Electromagnetic Pulse Task Force (EMPTF), which evaluated Bulk Power System (BPS) reliability and security concerns associated with a HEMP event and made recommendations towards meeting those expectations.

In its report<sup>3</sup> to the NERC Board of Trustees in November 2019, the EMPTF identified several Strategic Recommendations and key points of interest that should be addressed related to HEMP impacts on the BPS. Specifically, the EMPTF developed recommendations for next steps in the following areas:

- Policy
- Research and Development
- Vulnerability Assessments
- Mitigation Guidelines
- Response and Recovery

The report further recommended that an electromagnetic pulse (EMP) team should be maintained and expanded to provide guidance for further work, particularly projects undertaken through the NERC technical committees to develop vulnerability assessments, mitigation guidelines, and enhanced response and recovery plans.

## Purpose

The purpose of the new Electromagnetic Pulse Working Group (EMPWG) is to address aspects of the next level of key points of interest related to system planning, risks and assessments, modeling, and reliability impacts to the bulk power system (BPS) as identified in the "EMPTF: Strategic Recommendations" (Report) to NERC's Board of Trustees in November 2019. The EMPWG activities and responsibilities fall under the purview of NERC's Reliability and Security Technical Committee (RSTC).

## Activities

<sup>1</sup> <https://www.epri.com/research/products/3002014979>

<sup>2</sup> High-Altitude Electromagnetic Pulse and the Bulk Power System: Potential Impacts and Mitigation Strategies. EPRI, Palo Alto, CA: 2019. 3002014979.

<sup>3</sup> [https://www.nerc.com/pa/Stand/EMP Task Force Posting DL/NERC\\_EMP\\_Task\\_Force\\_Report.pdf](https://www.nerc.com/pa/Stand/EMP%20Task%20Force%20Posting%20DL/NERC_EMP_Task_Force_Report.pdf)

The EMPWG will serve as a stakeholder forum for focusing on HEMP from a transmission planning and system analysis perspectives. Some of the primary focuses of EMPWG will be data collection, modeling practices that are to determine the bulk power system (BPS) expectations for an EMP event. Based on that information, the industry can make the necessary preparations for attempting to meet those expectations. However, several policy matters, outside the ERO Enterprise, will severely impact the electric sector's ability to address an EMP event. Those policy matters include the lack of a cost recovery mechanism and access to classified information regarding an EMP threat.

Each of the strategic recommendations identifies suggested lead organizations, and in some cases with NERC serving a prominent role as the lead or co-lead for most of the items. Certain key items, such as access to classified EMP data/environments and cost recovery mechanisms, must be addressed elsewhere. The timing and sequencing of the recommendations and policy matters are crucial, and the need for a highly organized and coordinated effort to support EMP resilience must be emphasized.

The following items from the report list recommendations that were designated as NERC-led efforts and which EMPWG will address:

- Policy
- Research and development
- Vulnerability assessments
- Mitigation guidelines
- Response and Recovery

For issues from the Report that are not within NERC's areas of responsibility or authority, the EMPWG will seek to coordinate and facilitate efforts to accomplish these items from the Report:

- Policy matters
  - Cost Recovery Mechanisms
  - Industry Access to Classified Information
  - Declassification of Information

## **Deliverables**

See the EMPWG Work Plan<sup>4</sup> posted on NERC's website<sup>5</sup>.

## **Membership**

### **General Requirements**

The EMPWG must have sufficient expertise within its ranks to fully understand and provide guidance on issues relevant to industry about EMP.

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<sup>4</sup> EMPWG Work Plan: [https://www.nerc.com/comm/RSTC/EMPTF/EMPWG\\_Work\\_Plan.pdf](https://www.nerc.com/comm/RSTC/EMPTF/EMPWG_Work_Plan.pdf)

<sup>5</sup> [www.nerc.com](http://www.nerc.com)

- **Members**  
Members are users, owners, and operators of bulk power system assets and represent stakeholders.
- **Observers**  
Observers provide subject matter expertise to the EMPWG, particularly in areas not directly related to bulk power system planning and operation.

### **Commitment and Participation**

Members must be committed to their service on the EMPWG and are expected to actively participate in all meetings in person or on conference calls. As needed, members must also write and review draft reports, serve or advice on other NERC technical committees/teams, and bring issues to their Regional Entities, trade organizations, and utilities for further discussion and insight.

### **Reporting and Duration**

The EMPWG will make reports at each regular meeting of the RSTC. The detail of the report will be appropriate for the level of activity over the preceding three months, with special emphasis given to issues that require action, feedback or participation from RSTC members and other industry participants.

The EMPWG will report to the RSTC. EMPWG work products will be approved by the RSTC. The group will submit work plans as directed to the RSTC.

The EMPWG's working timeline is guided by the availability of work and other information from the various federal and state regulatory agencies, federal agencies working on the HEMP subject matters, and other non-governmental organizations working on HEMP.

### **Meetings**

EMPWG meetings will meet at least monthly, with updates provided to members and observers at least once per quarter. Meetings can be held via conference call, webinar, and/or face to face.