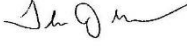


TO: NERC Board of Trustees (BOT)

FROM: Thomas J. Galloway, NATF President and CEO 

SUBJECT: NATF Periodic Update to the NERC BOT – November 2016

Attachments: 1. Selected Program Highlights (Peer Reviews, Practices, Training)

The North American Transmission Forum (NATF) mission is to promote excellence in the reliable operation of the electric transmission system, with the vision to see reliability continuously improve. To augment our strategic goals, the NATF has focused on several topics that serve as the base for trilateral collaboration between the NATF, EPRI, and INPO. The 2016 focus areas are:

1. Resiliency (All hazards, including severe weather, cyber/physical security, and GMD/EMP)
2. Human Performance (reduced frequency and consequences of human error)
3. Equipment Performance and Asset Management
4. Operating Experience Exchange – cause analyses, corrective action, and lessons learned
5. Continuous performance improvement mechanisms / processes including risk reduction

Some of the specific activities associated with the above are summarized as follows:

- Member coordination NERC Alert 2 – High Bandwidth Distributed Denial of Service Attacks
- **Vegetation Management workshop – focus on vegetation contacts including causes / actions**
- Stratification of member performance regarding key equipment failure rates
- Misoperation reductions via detailed analyses, measures, training, and superior practices
- Comprehensive risk assessment practices document and self-assessment tools
- Switchyard reliability assistance on-site visits and self-assessment tools
- Training for risk assessment and controls, human error reduction, and fundamentals
- **Operations practices / tools for loss of system visibility (traditional & non-traditional events)**
- **Resiliency Summit (Jan 10-11, 2017) focused on recovery/restoration**
- Member assistance to support comprehensive event review and corrective action
- Human performance “road-map” / supporting documents to advance maturity levels
- Joint NATF/NERC Human Performance Summit – March 2017

The NATF shares many common objectives with NERC. To advance these common objectives, and avoid redundant or conflicting efforts, we have undertaken periodic coordination meetings between the senior leadership of both organizations. The next such session is scheduled for October 25, 2016, with expected agenda topics including:

1. NERC sharing of select entity data / information (with authorization) to NATF staff
 - NATF to provide updated list of authorizing members
 - Review content / sharing protocols
2. Equipment issues for prospective coordination (based on risk identification)
3. Protection System misoperation reduction
 - Adoption of common metrics to promote alignment
 - Specific NERC concerns for added NATF focus
4. 2017 Joint Human Performance Conference
 - March 2017 Atlanta
 - Alignment on structure, themes, logistics details, and respective accountabilities
5. Resiliency / security
 - Status strategic transformer reserve, EMP / IEMI
 - Recovery / restoration including:
 - NATF summit 1/10-11/17
 - NERC / FERC PRASE effort
 - NATF "Spare Tire" Operations (during non-traditional events)
6. NERC Alert – cyber vulnerabilities
7. Vegetation management – events, causes, corrective actions

Also, given the extremely complex and dynamic nature of the industry currently, the NATF has decided to make certain, specific work products available beyond the membership. Two noteworthy areas involve recent NATF work on both physical security and modeling.

NATF member subject matter experts (SMEs) have produced high-quality work products on both of these topics. And, with NATF Board concurrence, we have decided to make selected documents public – to the benefit of the entire industry. Such documents are available via www.natf.net and are listed below.

- **NATF TPL-001-4 and Transient Voltage Criteria reference documents**
- NATF Modeling Data Request Guide (MOD-032)
- NATF Reference Documents – CIP-014 R1, R4, and R5
- NATF Reference Document – Generator Specifications
- NATF Reference Document – Power Flow Modeling
- NATF Reference Document – Reporting and Verification of Generating Unit Reactive Power Capability for Synchronous Machines

We plan to make other selected NATF work-products available outside the membership on a case by case basis.

cc:

ERO: G. Cauley, M. Lauby, J. Merlo, A. Koch, K. McIntyre, C. Edge

NATF: R. Carter, K. Keels, C. Sills, Letter Log

Attachment 1: Selected Program Highlights Practices

Practices/Products Developed in 2016

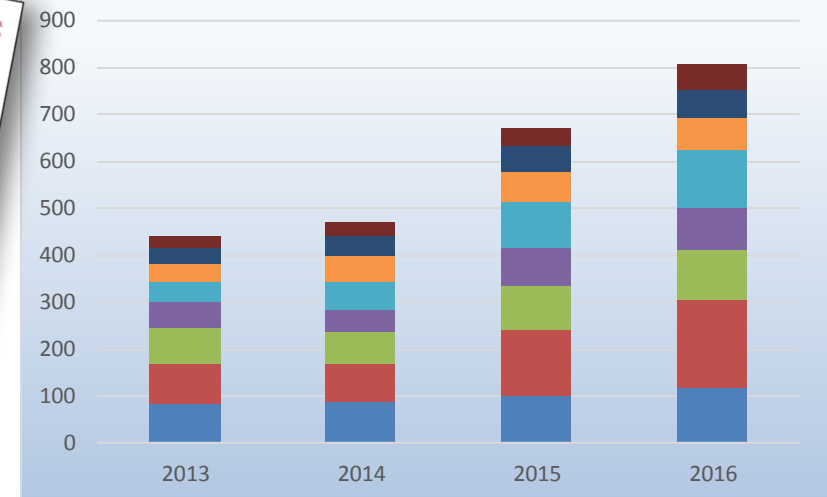
- TPL 001-4 Reference Document*
- Transient Voltage Criteria Reference Document*
- Next Terminal Out Assessment Guide
- Nuclear Plant Interface Requirements Training
- Concept of Operations for Central Security Control Center
- Protection Systems - Automated Testing
- Short Circuit Modeling
- Risk Assessment
- Job Task Analysis Practice
- Instructor Curriculum
- Simulator Training
- HP Roadmap

Practices/Products in progress

- DC Trip Circuit Design & Testing
- Arrestor Testing
- Switchyard Risk Evaluation and Mitigation
- Alarm Process Monitor
- Real-Time Data Quality Management
- Vegetation Management Contractor Workforce
- Vegetation Management Easements
- System Protection Coordination
- Protection System Maintenance and Testing
- Situational Awareness
- Power Line Carrier
- Outage Coordination
- SF6 Breaker Power Factor Testing
- Systematic Approach to Training
- System Protection Commissioning

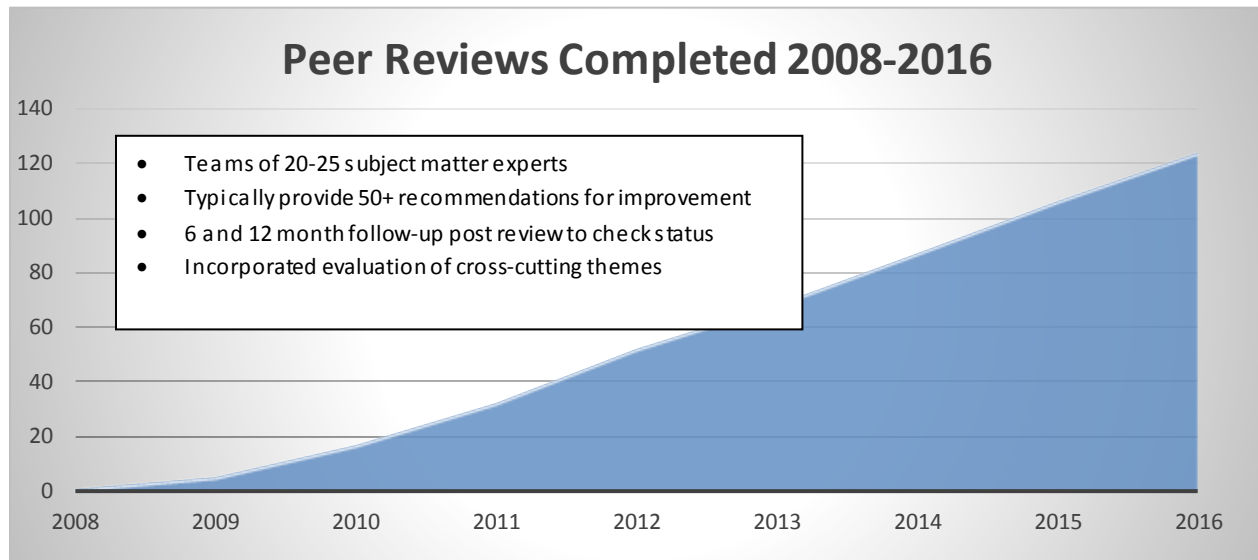


Practice Group Monthly Calls
Average Number of Participants: 2013 - 16



*Open Distribution (public) documents posted to
www.natf.net

Peer Reviews



Training

Risk Assessment/Internal Controls Webinars

- Internal Control Framework and Governance
- Risk Assessment
- Internal Control Design and Implementation
- Monitoring and Testing of Internal Controls

System Protection Webinars

- Directional Element Settings Practices
- Directional Comparison Blocking Settings Practices

Training Modules

- Electrical Transmission Basics
- *Math Review, Impedance, Power Principles and Phase Angle, Transformer Theory, Power Flow on AC Transmission Lines, Generator Theory*
- System Loads, Transmission Facilities, Generation Unit Basics, Relay Applications
- Causal Analysis

Future

- Human performance error reduction "Roadmap"
- System protection basics