North American Transmission FORUM

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January 26, 2017

TO: NERC Board of Trustees (BOT)

FROM: Thomas J. Galloway, NATF President and CEO

SUBJECT: NATF Periodic Update to the NERC BOT – February 2017

Attachments: 1. Selected Program Highlights (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 external collaboration. In both 2016 and 2017 (to date) those focus areas were:

1. Resiliency / Security (tangible actions to improve response and recovery for all relevant hazards)
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

Over the last several years the Reliability Issues Steering Committee (RISC) priorities have matured and stabilized. There has been considerable discussion between NERC, RISC, Technical Committees, Trades, NATF, and others about the opportunity to focus on RISC priorities presence in terms of advancing reliability, security, and resiliency; leveraging strengths of various organizations; and avoiding duplicative effort. The NATF supports added emphasis on RISC priorities for these reasons. Over the next few months NATF plans to progressively identify those RISC priorities and associated actions most on-point with NATF's mission, vision, strengths, and focus for prospective leadership. An initial assessment is listed below:

#	RISC Priority Description	NATF Role	RISC Rec#s	NATF Focus Summary*
1	Changing Resource Mix	Low	6	Share lessons learned and develop superior practices regarding priorities 1-2 as pertain to Transmission
2	Bulk Power System Planning	Low	1	
3	Resource Adequacy & Performance	Low	2	
4	Asset Management & Maintenance	High	1-10	Continue progress on well-established practice groups to identify and prioritize equipment performance (unique equipment, related processes) issues.
5	Human Performance / Skilled Workforce	High	1-4, 5-7	Continue progress on well-established practice group to consistently implement tools which reduce error frequency and consequence. Grow near-miss reporting. Evolve training offerings and knowledge transfer techniques to support needed workforce skills.
6	Loss of situational awareness	Med	5,6, 8-12	Evolve existing focus group to support improved situational awareness (tools, training, procedures) for normal and off-normal situations.
7	Extreme natural events	Low	6-8, 10	Include relevant aspects in overall resiliency efforts.
8	Physical security vulnerabilities	Med	3,5, 7-17	Evolve existing well-established practice groups to incorporate maturity models. Synch security efforts with overall resiliency efforts.
9	Cybersecurity vulnerabilities	Med	3, 9, 10, 13a	

*All effort linked through NATF programs (peer reviews, assistance, training, practices, etc.)

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 last session was completed January 23, 2017 with future meetings in April, July, and October. January agenda topics included:

1. NERC RISC priorities
2. Resiliency / Security
3. NERC data sharing to NATF
4. Equipment Performance Issues
5. Joint HP Conference Status
6. Vegetation Management
7. Misoperation Reduction / Measure Definitions
8. Information Sharing / Compliance Implementation Guidance

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.

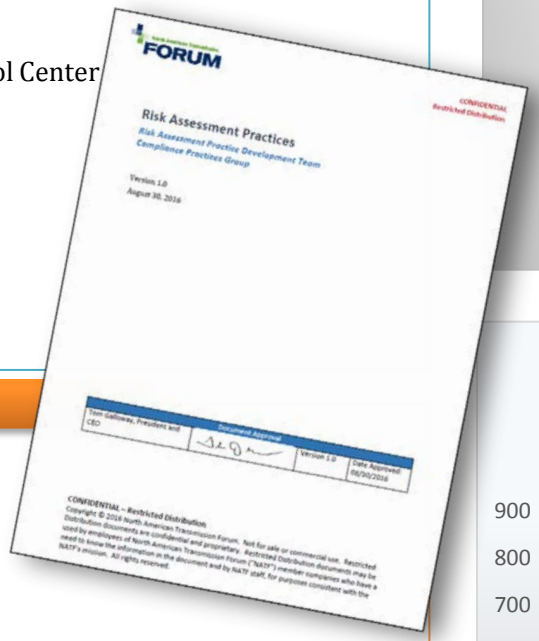
cc:
ERO: G. Cauley, M. Lauby, J. Merlo, A. Koch, K. McIntyre, C. Edge
NATF: R. Carter, K. Keels, C. Sills, Letter Log

Attachment 1: Selected Program Highlights

Practices

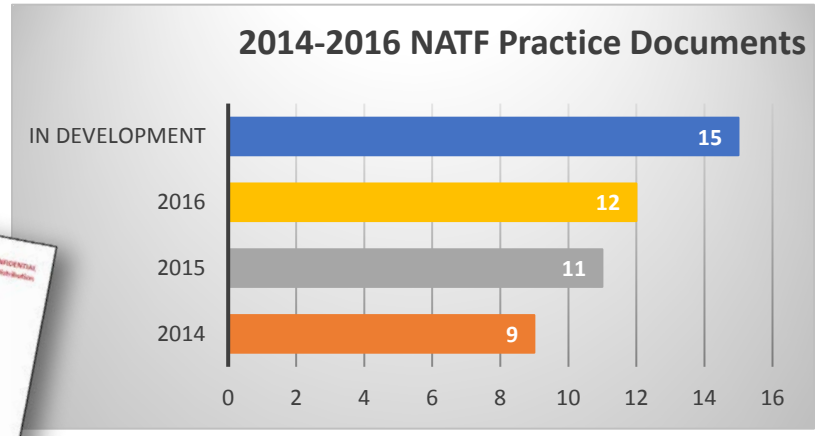
Practices/Products Developed in 2016

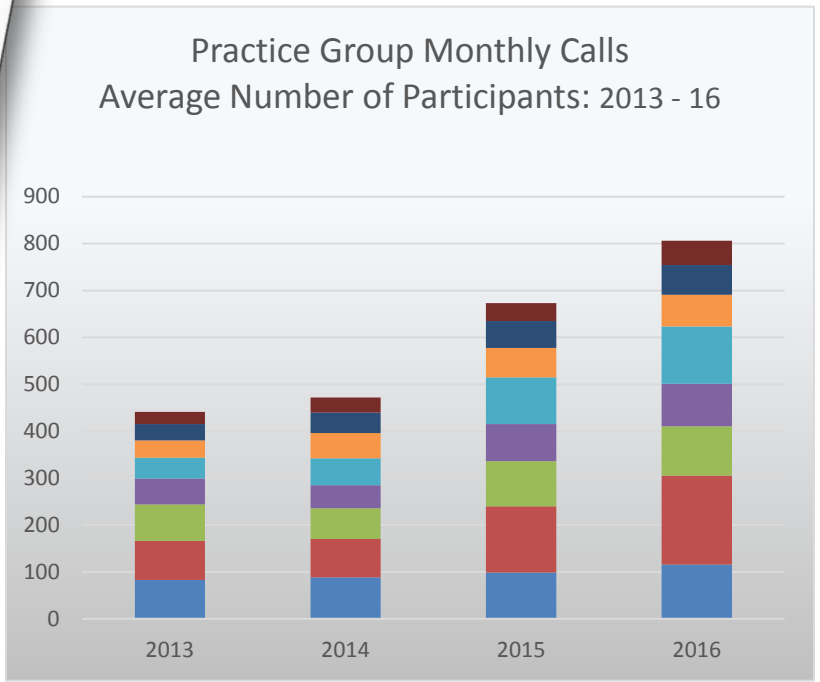
- TPL 001-4 Reference Document*
- Transient Voltage Criteria Reference Document*
- Next Terminal Out Assessment Guide
- Nuclear Plant Interface Requirements Training
- Concept of Operations for Central Security Control Center
- Protection Systems - Automated Testing
- Short Circuit Modeling
- Risk Assessment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





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

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" and supporting materials
- System protection basics