Proposed Amendments to Committee Mandate

Shamai Elstein, Assistant General Counsel
Technology and Security Committee Meeting
February 3, 2021
• The Technology and Security Committee (TSC) must review its mandate annually.

• The TSC must recommend any changes it considers advisable to the Corporate Governance and Human Resources Committee (CGHRC).

• Any changes must be approved by the full NERC Board of Trustees (Board).

• As part of the annual review process, NERC management proposes that the TSC recommend revisions to the CGHRC.
The proposed changes would include provisions that specifically recognizes the TSC’s role in:

- Reviewing NERC's cyber security posture, at least once annually
- Providing recommendations regarding the Electricity Information Sharing and Analysis Center’s (E-ISAC) annual budget to the Finance and Audit Committee and the Board
- Serving as the Board's liaison to the Electricity Subsector Coordinating Council's Member Executive Committee for the E-ISAC
Questions and Answers
E-ISAC Operations

Manny Cancel, SVP and CEO, E-ISAC
Technology and Security Committee Open Meeting
February 3, 2021
• Membership
• Threat Landscape
• Strategic Partnerships
• Portal Upgrade
• GridEx VI
• 2022 Budget Cycle
• Metrics
• 25% increase in member organizations
• 89% increase in partner organizations
• 57% increase in Portal users
• 2020 Supply Chain Compromise
  ▪ Initial access through SolarWinds
  ▪ Post-compromise in Microsoft Cloud
  ▪ Tiger Team to address lessons and identify additional industry needs

• Nation State Advanced Persistent Threat Adversaries
  ▪ Continue to track APTs from Russia, China, Iran, and North Korea
  ▪ Impact of U.S. presidential administration change

• Trends and Observations
  ▪ Continue to see RDoS attacks reported in sector (continued through Q4 2020)
  ▪ Continue to monitor ransomware in the electricity industry
• Trends
  ▪ Increasing threats and incidents drive AOO preventative measures such as VISA Workshops to improve AOO readiness posture
  ▪ Acts of vandalism associated with COVID-19 and Civil Unrest
  ▪ Continued threats from xtremists to cause disruption to the electricity industry
  ▪ Elevated risk environment for personnel and assets in proximity to mass gatherings and potential hot spots for unrest

• New Products
  ▪ Physical Security Quarterly Reports
  ▪ E-ISAC Situational Awareness Summaries: 2020 Election/Post-Election Events
    ▪ Potential Physical Security Threats to the Grid—Upcoming U.S. Inauguration
    ▪ Protective measures
    ▪ Virtual security vulnerability assessment workshop (VISA Workshops)
• Canadian Electricity Association
  ▪ Collaborate in monthly meetings and quarterly SIPC meetings
  ▪ Evaluate Canadian participation and coordination with the ESCC

• Canadian Security Establishment’s EnerSecCC
  ▪ Participate in monthly CSE government-industry calls
  ▪ Receive Canadian threat reporting – 2020 National Cyber Threat Assessment

• Ontario Independent Electricity System Operator
  ▪ Provided initial notification of Ransom Distributed Denial of Service activity during E-ISAC/IESO monthly analysts syncs
  ▪ Contribute to the Automated Information Sharing Working Group
  ▪ Re-signed agreement on 11/13/2020
• DNG and E-ISAC Collaboration

• Leverage new IESO portal

• Synchronize goals with new leadership at DHS CISA, DOE CR:

• Finalize Collaboration Agreement with ARC
• Migrate Portal to Salesforce in Q2 2021
• New features:
  ▪ Enhanced Post search and “topics” capabilities
  ▪ Simplified sharing options
  ▪ DAO organization profile and user management self-service
  ▪ On-line Case submission and tracking
**GridEx VI Goal:** Exercise the resilience of the North American electricity system in the face of a coordinated attack from a nation-state adversary.
• **Timeline**

- **April 29, 2021**: MEC meeting to review initial draft of proposed 2022 E-ISAC Budget
- **Late May 2021**: First draft of proposed NERC 2022 budget posted for comment
- **May-June 2021**: Feedback and follow up with MEC
- **Mid July 2021**: Second draft of 2022 NERC budget posted for comment
- **July 29, 2021**: MEC meeting to review/endorse proposed 2022 E-ISAC budget
- **August 12, 2021**: Final 2022 budget NERC presented to NERC Board for approval; file NERC budget with FERC and Canadian authorities
- **Mid to late October**: FERC approval
Questions and Answers
ERO Enterprise Align
Project Update

Stan Hoptroff, Vice President, Business Technology
Dee Humphries, Director, Project Management Office
Technology and Security Committee Meeting
February 3, 2021
Major/New Topics

- Release 1 and ERO Secure Evidence Locker (ERO SEL) Timeline Overview and Upcoming Milestones
- Change Readiness for Release 1
- Release 2
- Challenges
- How to Stay Informed
Align and ERO SEL Timeline (As of February 2021)

R1 Initial Regional Training (November – February)
Regions begin to conduct initial training for staff on use of Align focused on the changes to internal regional business processes

R1 Go/No-Go Process (December – April)
Series of checkpoints to monitor production readiness

R1 Final Data Validation (January – February)
Regional SMEs validate standards and entity data

R1 Initial Regional Training – Align and ERO SEL (January 25-February 12)
(Testing of evidence submission)

R1 Regional and Registered Entity Training – Align and ERO SEL (January - April)
Regions continue to conduct training for regional staff and entities

R1 Go/No-Go Process

R2 QA Testing (November/December)
Core team performs QA testing for R2

R2 UAT (February 1)
R2 SMEs perform UAT for R2

R2 Registered Entity Testing
(Testing of evidence submission)

R3 Design (January - March)
(e.g., IRA, COP)

R3 Design

AUDIENCE IMPACT KEY

In progress

Complete

R1 Go Live – MRO and TRE
March 31, 2021

R1 Go Live – Remaining Regions
May 24, 2021

R1 Go Live – WECC
May 10, 2021

NERC North American Electric Reliability Corporation

RELIABILITY | RESILIENCE | SECURITY
• Change Readiness Assessment (CRA) conducted in November 2020
  - Measured Regional readiness for Release 1 go-live
  - Registered entity perspective
  - Positive trend lines
## Readiness Core Question Results

<table>
<thead>
<tr>
<th>Question</th>
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<th>#2 Jul-19</th>
<th>#3 Nov-20</th>
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<th>What This Score Means</th>
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<td>63%</td>
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<td>N/A</td>
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</tr>
<tr>
<td>Understand business need of Align</td>
<td>3.73</td>
<td>3.80</td>
<td>3.83</td>
<td>(✓) 3%</td>
<td>There is general understanding among stakeholders of why NERC is investing in Align</td>
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<td>Aware of general changes</td>
<td>3.16</td>
<td>3.45</td>
<td>3.65</td>
<td>(✓) 14%</td>
<td>Awareness of Align changes has increased, but there is a need to focus more on specific behavior changes</td>
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<td>3.41</td>
<td>(✓) 17%</td>
<td>The communications effort is making a big difference and should be continued and increased</td>
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<tr>
<td>Ready &amp; equipped for changes</td>
<td>2.75</td>
<td>2.91</td>
<td>3.15</td>
<td>(✓) 14%</td>
<td>Stakeholders are still feeling unprepared for Align. This is expected as regional training has just begun</td>
</tr>
<tr>
<td>Personally committed to changes</td>
<td>3.81</td>
<td>3.86</td>
<td>3.96</td>
<td>(✓) 4%</td>
<td>Stakeholders are committed to adopting Align tools and processes</td>
</tr>
<tr>
<td>Create more efficient model</td>
<td>3.24</td>
<td>3.43</td>
<td>3.46</td>
<td>(✓) 7%</td>
<td>Majority of stakeholders feel that Align will create a more efficient process, but need to monitor score</td>
</tr>
<tr>
<td>Leadership committed to changes</td>
<td>3.65</td>
<td>3.85</td>
<td>4.04</td>
<td>(✓) 10%</td>
<td>Stakeholders feel that NERC &amp; Regional Leadership are committed to Align</td>
</tr>
</tbody>
</table>

### CRA November 2020 Pulse Check Overview

- **Survey Respondents:** 903
- **Response Rate:** 19%
Executive Summary: Align CRA Dashboard

Weighted average scores are higher across all change readiness dimensions from the Baseline to the most recent Pulse Check survey, however there is variation in readiness levels between Regions and registered entities.

<table>
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<tr>
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<th>#3 Nov-20</th>
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<th>MRO</th>
<th>NERC</th>
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<tr>
<td>Understand business need of Align</td>
<td>3.83</td>
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<td>4.38</td>
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<td>4.00</td>
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<td>4.56</td>
<td>4.24</td>
<td>4.4</td>
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</tr>
</tbody>
</table>

*Highest number of registered entities not familiar with Align are solely registered with SERC (42%) and WECC (22%)
Key Takeaways

- **Improved scores** across all readiness dimensions
- Greatest improvement in scores have been in *stakeholders’ perceptions of communications, awareness, and readiness* for changes associated with Align
- However, there remains **room for improvement** across different readiness dimensions between Regions and among registered entities
- **Upcoming Regional and registered entity training** is expected to help stakeholders feel more ready and equipped for Align
- **Conducting a separate trades survey** to gauge readiness and awareness

*The full report is available in the reference materials and includes comments from Regional staff and registered entities*
Release 2
Periodic Data Submittals (PDSs), Technical Feasibility Exceptions (TFEs), Self-Certifications
<table>
<thead>
<tr>
<th>Topic</th>
<th>Current State</th>
<th>Future State</th>
</tr>
</thead>
</table>
| **Self-Certifications**       | • Regions make use of both “traditional” and “guided” self-certifications; application of each and tools used varies by region  
• Rules of Procedure (ROP) language is based on “traditional” self-certifications  
• Self-certification forms vary in content and functionality                                                                                           | • Establish a single self-certification process, removing the distinction between “guided” and “traditional” self-certifications; Regions will have the flexibility to ask clarifying questions and request evidence at time of submission and anytime during the process  
• Explore opportunity to clean up ROP language to better reflect current processes  
• Self-certifications will be sent to registered entities as a common form containing applicable standards and requirements as defined by the CEA |
| **TFEs**                      | • Significant time and effort required to create reports for NERC and FERC  
• Volume of TFEs continues to reduce over time due to revisions to standards                                                                                                                                   | • A single standardized form to facilitate easier NERC and FERC reporting  
• Continue discussions with Steering Committee on future of TFE program and approach to implementation                                                                                                      |
| **PDSs**                      | • PDSs for standards on the national schedule are submitted through a variety of tools  
• Variety of templates used for PDSs  
• Do not have a method for tracking a “no” or “not applicable” response to PDS as data, which causes extra work for entities and Regions (creating, submitting, and reviewing blank spreadsheets/templates)  
• No functionality to account for Multi-Region Registered Entity Coordinated Oversight                                                                                                                  | • Day 1 implementation will focus on standards where data is currently being submitted in CITS/CDMS; additional standards may be rolled into BWise in the future  
• PDS response templates will be standardized where feasible; to be explored further in design  
• Create ability for entities to report “no” or “not applicable” so that it is easily visible/reportable, and can be tracked for future PDS requests to avoid duplicate requests to entities  
• CEAs will be able to send a PDS to all entities for which they are the Lead Region                                                                                                                     |
• Capability for Regions to create and schedule PDS requests
• PDS requests show up for registered entities on the date specified by the Region
- Registered entities can create TFEs and Material Change requests in Align and submit evidence to the ERO SEL
- Regions can review and approve/reject
- If approved, the requirement will no longer be applicable
• Regions create/schedule self-certifications, customize survey questions
• Registered entities complete self-certification in Align, submit evidence to ERO SEL, and submit self-certification for Regional review
• Regions review for non-compliance, and create findings in Align
• **Resources:** Multiple parallel efforts (R1 training/rollout, R2 user acceptance testing, R3 design, ongoing stakeholder engagement)

• **Budget pressure:** Balance in-scope efforts with continuous improvement requests (i.e., 50 enhancements from stakeholders)

• **Security vs Usability:** Can involve multiple steps to keep data secure
How To Stay Informed

Key communication vehicles

- Align newsletter for Regions and registered entities
- Regional Change Agent Network
- Dedicated project page on NERC.com: [Click Here](https://www.nerc.com)
- Upcoming Compliance Monitoring and Enforcement Program (CMEP) Regional workshops
- Trades meetings
- NERC News
- Social media
Questions and Answers
Background and Reference Material
Change Readiness Assessment Full Report
Executive Summary: Demographics

The demographics of the 2020 Pulse Check respondents (N=903) closely mirror demographics of the 2019 Pulse Check (N=975) and Baseline survey respondents (N=1,178). The 0.07% decrease in respondents between the two Pulse Checks is due to fewer responses received from registered entities. Similarities in demographics establish a strong ability to track and benchmark progress:

### Baseline & Pulse Check Surveys Respondents

**Respondents by Role**

- 2019 Pulse Check:
  - 72% Regional Entity
  - 19% Registered Entity
  - 6% Other

- 2019 Baseline Survey:
  - 74% Regional Entity
  - 18% Registered Entity
  - 5% Other

- 2020 Pulse Check:
  - 70% Regional Entity
  - 21% Registered Entity
  - 5% Other

### If Regional Entity, Which Region?

- **WECC**
  - Mar-19: 20%
  - Jul-19: 20%
  - Nov-20: 20%

- **TRE**
  - Mar-19: 20%
  - Jul-19: 20%
  - Nov-20: 20%

- **SERC**
  - Mar-19: 21%
  - Jul-19: 19%
  - Nov-20: 19%

- **RF**
  - Mar-19: 21%
  - Jul-19: 24%
  - Nov-20: 24%

- **NPCC**
  - Mar-19: 7%
  - Jul-19: 6%
  - Nov-20: 6%

- **MRO**
  - Mar-19: 13%
  - Jul-19: 13%
  - Nov-20: 13%

### If Registered Entity, Which Region?*

*Indicates respondents were able to select multiple response options

- 2019 Pulse Check:
  - WECC: 17%
  - TRE: 14%
  - SERC: 21%
  - RF: 22%
  - NPCC: 11%
  - MRO: 14%

- 2019 Baseline Survey:
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---

*Mar-19, Jul-19, Nov-20*
The demographics of Pulse Check respondents (N=903) closely mirror demographics of Baseline survey respondents (N=1,178). These similarities establish a strong ability to track and benchmark progress:

**Baseline & Pulse Check Surveys Respondents**

**Involvement in CMEP Activities**

- **Mar-19**: 7% Not Involved, 23% Unsure, 67% Awareness, 3% Actively Involved
- **Jul-19**: 3% Not Involved, 22% Unsure, 70% Awareness, 5% Actively Involved
- **Nov-20**: 3% Not Involved, 23% Unsure, 71% Awareness, 3% Actively Involved

**Focus Area***


**Years of Experience**

- **Mar-19**: Less than 1 year: 16%, 1-3 years: 18%, 3-5 years: 11%, More than 5 years: 55%
- **Jul-19**: Less than 1 year: 17%, 1-3 years: 17%, 3-5 years: 14%, More than 5 years: 18%
- **Nov-20**: Less than 1 year: 16%, 1-3 years: 18%, 3-5 years: 11%, More than 5 years: 55%

*Indicates respondents were able to select multiple response options.
Weighted average scores are higher across all readiness dimensions from the Baseline to the most recent Pulse Check survey.

**Readiness Core Question Results**

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**Key Takeaways**

1. **Improved scores** across all readiness dimensions
2. Greatest improvement in scores have been in stakeholders’ perceptions of communications (17%), awareness (14%), and readiness (14%) for changes associated with Align
3. However, there remains room for improvement across different readiness dimensions
4. Upcoming regional and registered entity training is expected to help stakeholders feel more ready and equipped for Align

*Δ % Change between Mar-19 baseline assessment and Nov-20 pulse check*
Registered entities have lower weighted average scores across all readiness dimensions and less familiarity with Align. There remains room for improvement at a Region-specific level.

### Readiness Core Question Results Broken Down By NERC, Regional, and Registered Entities

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*Highest number of registered entities not familiar with Align are solely registered with SERC (42%) and WECC (22%)*
Executive Summary: Overview

Survey results support that **change management and readiness activities are resonating with stakeholders**. Stakeholders feel much more ready for Align Release 1 than they did in July 2019.

### Key Takeaways

- Most respondents understand why NERC is implementing Align; registered entities’ familiarity with Align can be improved
- NERC and Regional Leadership support for Align is widely acknowledged
- Stakeholders feel much more prepared for the upcoming changes, but certain readiness scores for some Regions remain low
- Anticipation and desire for upcoming Align training remains a common theme

### Weighted Averages for Respondent Ratings across Key Change Readiness Areas

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mar-19</th>
<th>Jul-19</th>
<th>Nov-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand the business need and value of Align</td>
<td>3.7</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Aware of the general changes</td>
<td>3.2</td>
<td>3.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Communications related to Align are adequate</td>
<td>2.9</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Ready and equipped with the right skills to adopt the changes</td>
<td>2.7</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Committed to adopting the process and technology</td>
<td>3.8</td>
<td>3.9</td>
<td>4</td>
</tr>
<tr>
<td>Confident that Align will create a more efficient model</td>
<td>3.2</td>
<td>3.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Leadership is committed to the success of Align</td>
<td>3.7</td>
<td>3.8</td>
<td>4</td>
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</tbody>
</table>
Key themes include increased cadence and quality of communications, effectiveness of adoption workshops and other awareness meetings, and usefulness of tools demos and walkthroughs.

System walkthroughs during adoption workshops and recent training sessions, as well as written communications have been helpful to understand how Align looks, feels, and works.

Communications and allowing user testing early in the process to help with defects and improvements.

Transparency in Align model and expectations and regular, digestible communications over time from Regions.

The Steering Committee takes its job seriously. The NERC Align Team takes its job seriously and is getting the communications out and keeping the Regions involved as a partner.

Adoption workshops and presentations about how the evidence locker and Align tool works. Well described/communicated purpose and updates on delayed implementation.

The magnitude of communication efforts around Align, implementation timelines, upcoming changes etc. have been great.

I appreciate that NERC and Regional Entity staff are working to ensure that the product is secure and functional prior to rolling out the new tool.

Obtaining and adapting to the changes recommended by industry. Certainly appreciate regular communication that NERC/Regions have been sending to all stakeholders.

Abundant communication, and the fact that issues are being addressed prior to rollout rather than releasing an incomplete product.

NERC Staff

SERC Staff

MRO Regional Staff

NPCC Staff

RF Staff

TRE Staff

RF Registered Entity Staff

MRO, RF, TRE Registered Entity Staff

MRO, NPCC, RF, TRE, WECC Registered Entity Staff
Executive Summary: What Could Be Done Differently

Majority of responses received from registered entities and suggestions primary include a desire for training and other opportunities to interact with the tool, clarity on the rollout timeline, and more communications from the regions.

More discussion of information protection and assurance that Align is secure. Discussion of features available to make the CMEP process more efficient especially for responsible entities.

**MRO, WECC Registered Entity Staff**

Just keep the training coming, I would also like to see more than one webinar for those registered entities that are interested in building out an on-prem SEL.

**MRO, NPCC, RF, TRE, SERC, WECC Registered Entity Staff**

Need more communications from the Regional Entity about Align.

**SERC Registered Entity Staff**

Develop and provide a solid user manual and share with potential users. Most of us can self-learn or refer to the manual when needed.

**RF, TRE Registered Entity Staff**

Additional targeted training on each release feature. Availability of an Align Help Desk to answer questions.

**MRO, RF, TRE, SERC, WECC Registered Entity Staff**

More training, time to test the tools and identify process changes that could be on the horizon. So much is still unknown.

**WECC Staff**

More training opportunities, broadcast in a variety of ways, from both NERC and the Regional Entity. More interactive training, i.e., sharing a screen and walking through how to use it.

**MRO, NPCC, RF, TRE, SERC, WECC Registered Entity Staff**

Would love to see an updated rollout timeline breaking down which components of Align will roll out on which dates at the top of each email/newsletter.

**NERC Staff**

A more specific timeline with when things will move over to Align. Regional Entities should be in direct contact with end-users to explain how and when changes will occur, and to offer education related to these changes.

**TRE Registered Entity Staff**
Respondents acknowledge NERC’s responsiveness in addressing security concerns related to Align and the ERO secure evidence locker and reinforce desire for upcoming training.

**NPCC Staff**

This investment in standardization facilitated by Align will have learning curves and growing pains along the way but this will be a great thing in the long term.

**MRO Registered Entity Staff**

Thank you for researching the question on the Chinese purchase of the Align developer's holding company.

**NPCC Registered Entity Staff**

I think they are doing a great job. This is no easy feat, but something that is very worthwhile and over due. keep up the early outreach and high quality support communication.

**MRO Staff**

I think the communication has drastically gotten better and more organized in the last few months - keep up the good work!

**MRO Registered Entity Staff**

We keep hearing that it is coming soon, but so far, no training has been provided. We hope that training will be provided well ahead in advance before going live. Also, this will give users time to "play" with the tool and ask questions before going live.

**RF Staff**

The Align team appears to be focused on success and not pushing out a product that has a lot of bugs or unknown processes. Great job.

**TRE Registered Entity Staff**

We appreciate NERC’s responsiveness in addressing the security concerns of the secure evidence lockers.

**Registered Entity Staff (Unspecified Region)**

Over the past year NERC has done an excellent job of soliciting industry participation to remedy issues with the security and effectiveness of Align. It is critical that this level of participation continue through the implementation and operation of the platform. NERC should solicit and respond to industry feedback regarding the operation of the platform and obtain periodic external security audits and make them available to industry representatives in a matter consistent with ensuring security.
## Executive Summary: Demographics

### Total Number of Survey Respondents

<table>
<thead>
<tr>
<th></th>
<th>Regional Entity</th>
<th>Registered Entity</th>
<th>NERC</th>
<th>Others</th>
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<tr>
<td>Mar-19</td>
<td>228</td>
<td>845</td>
<td>38</td>
<td>67</td>
<td>1178</td>
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<td>Nov-20</td>
<td>191</td>
<td>634</td>
<td>31</td>
<td>47</td>
<td>903</td>
</tr>
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</table>

Respondents Listed as “Others” Include –

- Consultants and contractors for NERC, Regional, and registered entities
- De-listed/de-registered entity staff

### Regional Entity Staff

<table>
<thead>
<tr>
<th></th>
<th>FRCC</th>
<th>MRO</th>
<th>NPCC</th>
<th>RF</th>
<th>SERC</th>
<th>TRE</th>
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<td>26</td>
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<td>Nov-20</td>
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<td>27</td>
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<td>41</td>
<td>41</td>
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### Registered Entity Staff

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<th>MRO</th>
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<th>RF</th>
<th>SERC</th>
<th>TRE</th>
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<tr>
<td>Mar-19</td>
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<td>137</td>
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<td>184</td>
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<td>129</td>
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<td>245</td>
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<td>225</td>
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<tr>
<td>Nov-20</td>
<td>-</td>
<td>135</td>
<td>106</td>
<td>139</td>
<td>215</td>
<td>124</td>
<td>183</td>
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</table>
Executive Summary: Communications

Familiarity with the Bi-monthly Align Newsletter(s) – Launched in May 2019

- Awareness about Align Newsletter(s)
  - Jul-19: 36%
  - Nov-20: 47%

Perceived effectiveness of Align newsletter(s) in learning about Align

- Jul-19: 3.78
- Nov-20: 3.71

Preferred Methods of Communications Related to Align

- Regional entity newsletters/ email blasts: 464
- NERC newsletters/email blasts: 461
- Regional entity compliance workshops: 293
- Direct communication from NERC project member(s): 262
- Align project website: 240

Preferred Methods of Align Communications
**Release 1 Functionality**

- Create and submit Self-Reports and Self-Logs
- Create and manage mitigating activities (informal) and Mitigation Plans (formal)
- View and track Open Enforcement Actions (EAs) resulting from all monitoring methods
- Receive and respond to Requests for Information (RFIs)
- Receive notifications and view dashboards on new/open action items
- Generate report of NERC Standards and Requirements applicable to your entity
- Manage user access for your specific entity
Align Release 1: What to expect as a Regional Entity?

**Release 1 Functionality**

- Receive Self-Reports and Self-Logs from entities
- Manually create findings that result from any monitoring method (Audits, Spot Checks, Investigations, Periodic Data Submittals (PDSs), Self-Certifications, Complaints)
- Perform Preliminary Screens, Potential Noncompliance (PNC) Reviews, and disposition determinations for each PNC/EA
- Send and received responses to RFIs
- Trigger notifications such as Notice of Alleged Violation(s) and Proposed Penalty or Sanction, Notices of Confirmed Violation(s), Compliance Exception Letter(s), Find, Fix, Track & Report Letter(s), and Settlement Agreements
- Receive, review, and approve mitigating activities (informal) and Mitigation Plans (formal)
- Receive notifications and view dashboards on new/open action items
- Generate report of NERC Standards and Requirements applicable to a registered entity
### Release 2 Functionality

**Est. 2021**

- Technical Feasibility Exceptions
- Self-Certifications
- PDSs

*Note: A strategy is being developed for how these monitoring methods will be managed in the gap between Releases*

### Release 3 Functionality

**Est. 2021**

- Compliance Planning (Risk, CMEP Implementation Plan, Inherent Risk Assessment, Internal Controls Evaluation, Compliance Oversight Plan)
- Compliance Audit
- Spot Check
- Compliance Investigations
- Complaints
Moving to a common platform will provide:

• **Alignment of common & CMEP business processes**, ensuring consistent practices and data gathering

• **A standardized interface** for registered entities to interact with the ERO Enterprise

• **Real-time access to information**, eliminating delays and manual communications

• **Consistent application** of the CMEP

• **More secure** method of managing and storing CMEP data
ERO Enterprise Secure Evidence Locker Update

Stan Hoptroff, Vice President, Business Technology
Justin Lofquist, IT Director
Technology and Security Committee Meeting
February 3, 2021
• Solution Overview - Refresher
• Strategic Approach to Security - Talking points
• Current Status
• Review of Potential Risks
What is the Enterprise Secure Evidence Locker (ERO SEL)?

- A highly secure, isolated environment
  - Purpose-built to collect and protect evidence
  - Enables submission by authorized and authenticated entity users
  - Provides compartmentalized analysis of evidence in temporary, isolated, disposable environments
  - No interfaces with any other systems
- Evidence
  - Is encrypted immediately upon submission
  - Is securely isolated per entity
  - Is never extracted
  - Is never backed up
  - Is subject to proactive and disciplined destruction policies
ERO SEL - How will it work?
Technical Implementation

ERO Enterprise Evidence Analysis
Locker

- Secure File Transfer
  - Encryption
    - Regionally Specific
  - Routing Rules
- Enterprise Content Management
  - Locker
- Analysis Environment
  - Auditor Session
    - Analysis tools
    - Disposable
  - Enforcement Session
    - Analysis tools
    - Disposable

Management Utilities

Registered Entity User
MFA Authentication

Authorized CMEP Personnel
MFA Authentication

Privileged Session Server
MFA
System Administrator
• Formulated on the assumption that the environment can be compromised
• Four foundational concepts, which provide a layered defense posture:
  ▪ Access Controls
    o Multiple sets of credentials with multi-factor authentication; minimum necessary access; separate of duties for privileged activities
  ▪ Isolation
    o Physical isolation and restriction of all inbound and outbound traffic to a) submission of evidence, b) outbound mail traffic, and c) outbound event logs
  ▪ Encryption
    o Asymmetric, strong encryption for data at rest and in transit
  ▪ Monitoring
    o Multi-layered, around-the-clock monitoring with alerting to NERC Information Technology
• Adherence to the National Institute of Standards and Technology (NIST) 800-171 framework, targeted to protect Controlled Unclassified Information, with an annual validation schedule

• Target requests for evidence to minimize the amount of information collected at any one time

• Collected evidence will be subject to a proactive and disciplined policy of destruction

• For highly sensitive information, a registered entity may work with its Regional Entity, to provide such evidence outside of the ERO SEL

• Security Advisory Group to provide strategic leadership and guidance for the ERO and the SEL
• Data Dispersion
  ▪ Technical controls for isolation
    o Evidence physically separated by Region
    o Different, unique encryption keys used for each Region (no master key)
  ▪ Reduced attack surface / consolidation of resources

• Supply chain protections
  ▪ Vendor risk assessment
  ▪ No ‘hands-on-keyboard’ support
• Initial construction completed 12/2020
• Regional User Acceptance Testing completed
  ▪ Defect resolution and Enhancements underway
• Third-party vendor assessment in progress
  ▪ Built-as-designed
  ▪ Adherence to NIST 800-171
• Registered entity testing underway
• NERC operational staff training in progress
• Functional demonstrations and discussions for stakeholders underway
ERI SEL Potential Risks

- Support of new technologies
- Delays created by the COVID-19 pandemic
  - Professional Services (travel and collaboration)
  - Testing and in-person training
Questions and Answers
ERO Business Technology
Projects Update

Stan Hoptroff, Vice President, Business Technology
Technology and Security Committee Meeting
February 3, 2021
• ERO Business Technology Projects Update
  ▪ Major focus on cyber protection and aging infrastructure

• Electricity Information Sharing and Analysis Center (E-ISAC) Technology Projects
  ▪ Salesforce customer relationship management (CRM)

• Security Advisory Group (SAG)

• Priorities Looking Ahead
• CRM tool (Salesforce) in production, saving time and increasing accuracy of member on-boarding, tracking and stakeholder contacts

• E-ISAC Portal – Platform replacement to Salesforce underway; expected go live in Q2 2021

• E-ISAC Data Platform (EDP) – Implemented functionally in June 2020; converting to a robust, reliable, secure production platform in Atlanta data center; continue to expand analytical capabilities
• Advisory body established by NERC Management
• Represents all industry sectors; engagement at the Chief Information Security Officer level
• Will interface with NERC Information Technology Leadership
• Supports NERC Management with expertise and advice on data confidentiality, integrity and security
• Sensitive industry information stored or processed by NERC
• First meeting was held on January 28, 2021
Jack Cashin – American Public Power Association (APPA)
Michael Fish – Salt River Project
Steven Foley – Exelon
Gurdeep Kaur – Public Service Enterprise Group
Andrea Koch – Edison Electric Enterprise
Stephen Kwok – Los Angeles Department of Water and Power
Barry Lawson – National Rural Electric Cooperative
Steve McElwee – PJM
Jamey Sample – Xcel Energy
Benjamin Waldrep – Duke Energy
Priorities Looking Ahead

- Analytical capabilities for the E-ISAC under the EDP
- Accelerated adoption of Salesforce capabilities for the E-ISAC
- Implementation of Microsoft Teams
- Regional focus on cyber security
- Various software/hardware upgrades to NERC infrastructure
Questions and Answers