

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Proposed Amendments to Committee Mandate

Shamai Elstein, Assistant General Counsel
Technology and Security Committee Meeting
February 3, 2021

RELIABILITY | RESILIENCE | SECURITY



- 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

A DIVISION OF NERC



E-ISAC

ELECTRICITY
INFORMATION SHARING AND ANALYSIS CENTER

E-ISAC Operations

Manny Cancel, SVP and CEO, E-ISAC
Technology and Security Committee Open Meeting
February 3, 2021

TLP:GREEN

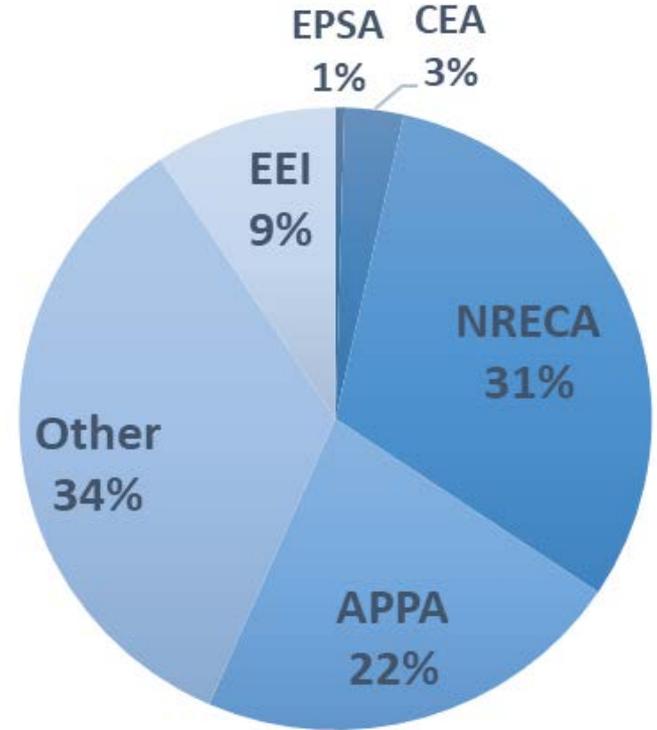
RELIABILITY | RESILIENCE | SECURITY



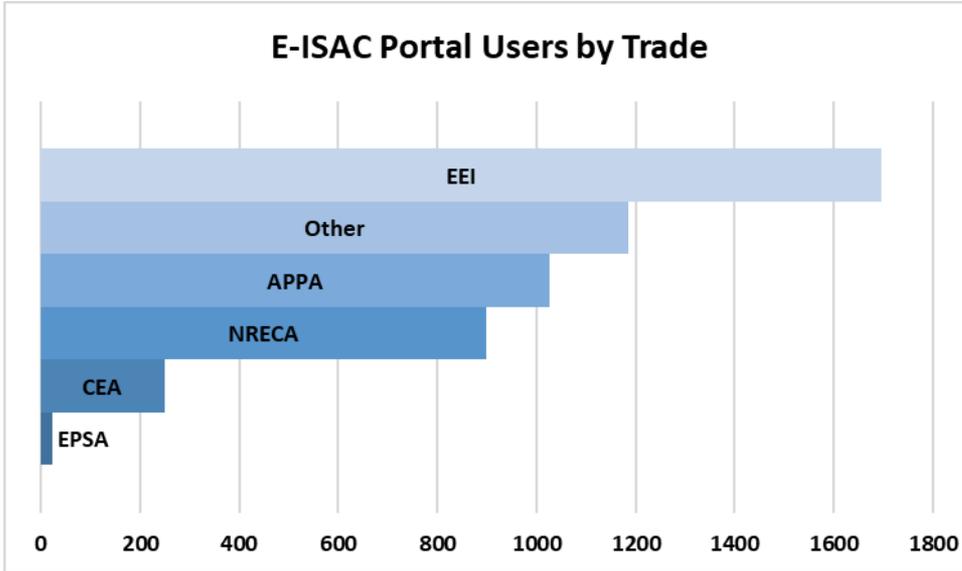
- Membership
- Threat Landscape
- Strategic Partnerships
- Portal Upgrade
- GridEx VI
- 2022 Budget Cycle
- Metrics

- 25% increase in member organizations
- 89% increase in partner organizations
- 57% increase in Portal users

Member Organizations by Trade



E-ISAC Portal Users by Trade





- 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 RDDoS 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)

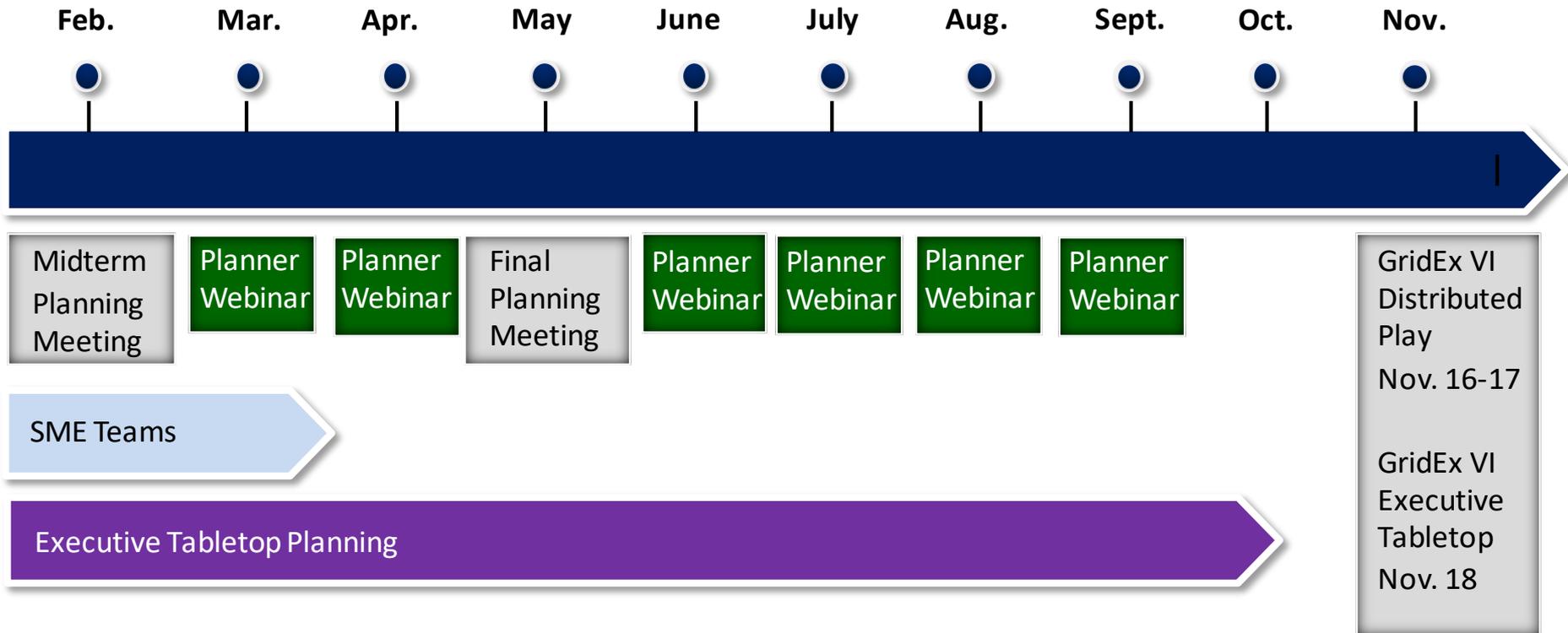
- Canadian Electricity Association
 - Collaborate in monthly meetings and quarterly SIPC meetings
 - Evaluate Canadian participation and coordination with the ESCC
- Canadian Security Establishment's EnerSecCC
 - Participate in monthly CSE government-industry calls
 - Receive Canadian threat reporting – 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

A stylized map of North America, including the United States, southern Canada, and northern Mexico. A solid blue horizontal band is superimposed over the map, passing through the center of the United States. The text 'Questions and Answers' is centered within this blue band.

Questions and Answers

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

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

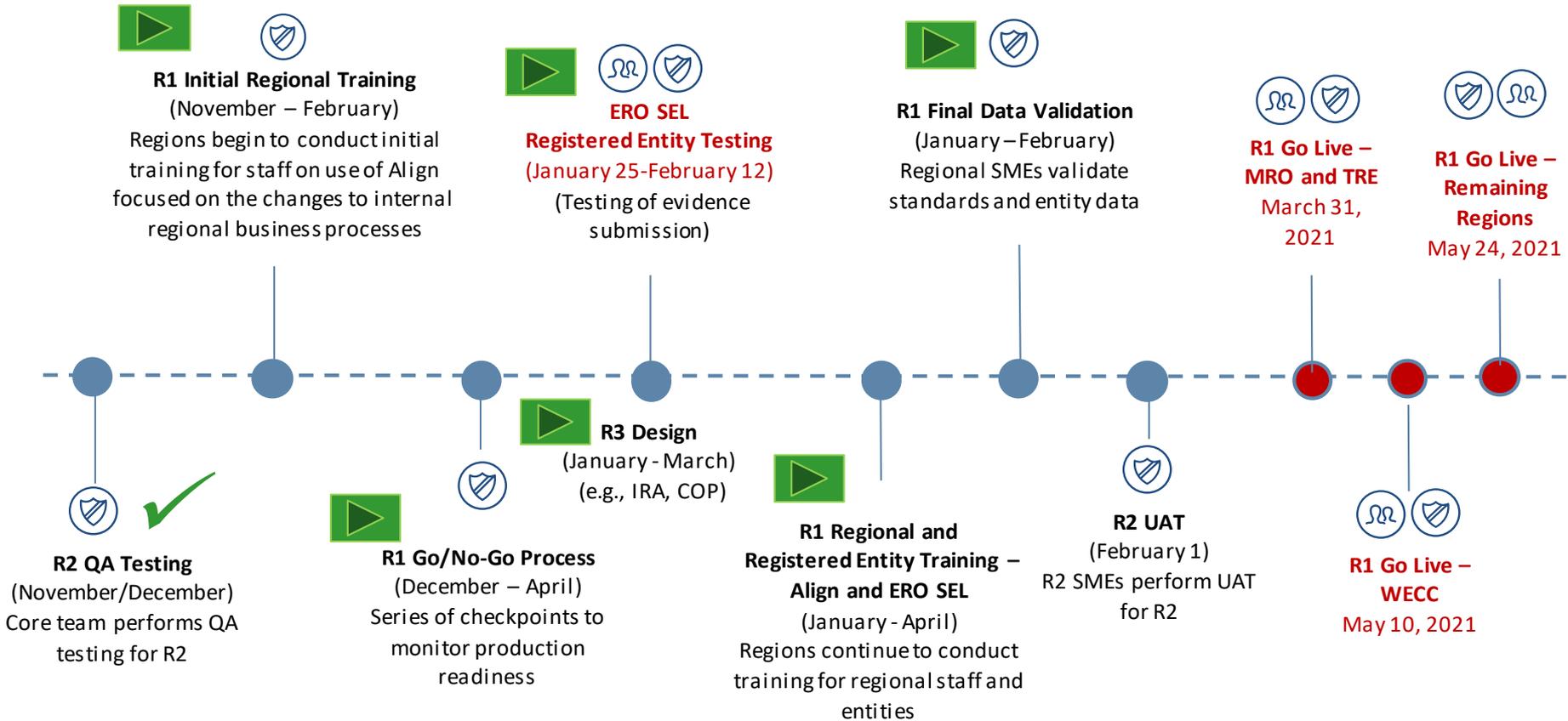
RELIABILITY | RESILIENCE | SECURITY



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)



AUDIENCE IMPACT KEY



Registered Entities



Enterprise Staff



In progress



Complete

- 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

Question	#1 Mar-19	#2 Jul-19	#3 Nov-20	Δ % Change*	What This Score Means
Familiar with Align	47%	63%	81%	N/A	Majority of stakeholders are familiar with the Align project
Understand business need of Align	3.73	3.80	3.83	 3%	There is general understanding among stakeholders of why NERC is investing in Align
Aware of general changes	3.16	3.45	3.65	 14%	Awareness of Align changes has increased, but there is a need to focus more on specific behavior changes
Comms received have been adequate	2.87	3.20	3.41	 17%	The communications effort is making a big difference and should be continued and increased
Ready & equipped for changes	2.75	2.91	3.15	 14%	Stakeholders are still feeling unprepared for Align. This is expected as regional training has just begun
Personally committed to changes	3.81	3.86	3.96	 4%	Stakeholders are committed to adopting Align tools and processes
Create more efficient model	3.24	3.43	3.46	 7%	Majority of stakeholders feel that Align will create a more efficient process, but need to monitor score
Leadership committed to changes	3.65	3.85	4.04	 10%	Stakeholders feel that NERC & Regional Leadership are committed to Align

 Sustain
Score of
4.0 – 5.0

 Monitor
Score of
3.0 – 4.0

 Address
Score of
0.0 – 3.0



Favorable



Unfavorable

- **Survey Respondents: 903**
- **Response Rate: 19%**

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.

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

Question	#3 Nov-20	Registered Entity Staff	MRO	NERC	NPCC	RF	SERC	TRE	WECC
Familiar with Align	81%	77%*	100%	96%	95%	92%	85%	100%	100%
Understand business need of Align	3.83	3.73	4.19	4.38	4.2	4.23	3.91	4.28	4.00
Aware of general changes	3.65	3.49	4.27	4.46	4.2	4.26	4.00	4.16	4.00
Comms received have been adequate	3.41	3.31	3.58	4.00	4.1	3.91	3.62	3.96	3.32
Ready & equipped for changes	3.15	3.07	3.19	3.83	3.75	3.5	3.18	3.6	2.97
Personally committed to changes	3.96	3.85	4.46	4.63	4.25	4.38	4.09	4.36	4.21
Create more efficient model	3.46	3.42	3.38	4.00	3.95	3.41	3.59	3.44	3.53
Leadership committed to changes	4.04	3.94	4.46	4.46	4.4	4.56	4.24	4.4	4.24

*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

R2: Self-Certification, PDS and TFE Process Improvements

Topic	Current State	Future State
Self-Certifications	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

Periodic Data Submittal Align for Regions

PDS Requests PDS Submittals Review Closed PDS Requests WECC Editor 1

CREATE NEW PDS REQUEST

PDS ID	REQUEST NAME	USE AS TEMPLATE
PDSR / 000005	2TestDataFeed	+
PDSR / 000015	2TestDataFeed	+
PDSR / 000006	3TestDataFeed	+
PDSR / 000007	4TestDataFeed	+
PDSR / 000008	5TestDataFeed	+
PDSR / 000016	5TestDataFeed	+
PDSR / 000009	6TestDataFeed	+
PDSR / 000001	HS Test 1	+
PDSR / 000010	HS Test	+

Page 1 of 1

INSTRUCTIONS

This tab shows the Periodic Data Submittal (PDS) requests and allows you to draft and request PDS requests to the Registered Entity (RE). In the next tab 'Review PDS Submittals' you can review PDS requests that are submitted by the RE. The third tab shows the closed PDS requests.

On the following tabs there are these functionalities:

Tab 1 PDS Requests:
 Top Left: The first section contains a portlet with a tabular overview of previously sent PDS requests. It is possible to add a new entry to this table by clicking the + sign (left of the portlet table), this is needed for creating a PDS Request from scratch.
 Bottom: Once a CEA decides to save a PDS Form it will automatically appear as a draft PDS Form in this section. By clicking on the PDS name in the table a popup window will open the selected draft PDS Form which can be further filled in and sent to the RE.

Tab 2 Review PDS Submittals:
 Top: The top section contains a tabular portlet overview of PDS Requests that are being completed by the RE
 Bottom: the bottom section contains Submitted PDS Requests by the RE. From this overview the CEA can review the individual PDS Form.

Tab 3 Closed PDS Requests:
 This section contains a tabular portlet overview containing archived PDS requests. This overview also contains the PDS Forms submitted whereby the RE indicated 'Yes' to the validation question. From this overview the CEA can view the archived PDS Forms.

DRAFT PDS REQUESTS

<input type="checkbox"/>	PDS ID	REQUEST NAME	FUNCTIONS	TYPE OF PDS	REPORTING PERIOD	START DATE	DUE DATE

- Capability for Regions to create and schedule PDS requests
- PDS requests show up for registered entities on the date specified by the Region

Technical Feasibility Exception

Create New TFE Requested TFE

REGISTERED ENTITIES

NCR	NAME	CEA	SPECIFY REQUEST
NCR00003	Bartow, City of	SERC	Create TFE
NCR00004	Beaches Energy Services of Jacksonville Beach	SERC	Create TFE
NCR00006	Calpine Corporation	NPCC	Create TFE
NCR00006	Calpine Corporation	RF	Create TFE
NCR00006	Calpine Corporation	SERC	Create TFE
NCR00006	Calpine Corporation	TXRE	Create TFE
NCR00006	Calpine Corporation	NPCC	Create TFE

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DRAFTS

<input type="checkbox"/>	UNIQUE TFE ID	TFE OR MCR	REGISTRATION	STANDARD / REQUIREMENT	PROPOSED TERMINATION DATE

Page 0 of 0

- 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

Self-Certification
Align for Regions

Self-Cert Requests | Self-Cert Submittals Review | Closed Self-Cert Requests | Self-Cert Library
WECC Editor 1

CREATE NEW SELF-CERT REQUEST

REQUEST ID	REQUEST NAME	USE AS TEMPLATE
SCR / 000010	1DataFeedTest-RBM	+
SCR / 000009	123DataFeedTest	+
SCR / 000008	1DataFeedTest	+
SCR / 000007	1DataFeedTest	+
SCR / 000006	1401DataFeedTest	+
SCR / 000005	1401DFTest	+
SCR / 000004	NewTest	+
SCR / 000003	After Merge Test	+

Page 1 of 1

INSTRUCTIONS

This tab shows the Self-Certification (Self-Cert) requests and allows you to draft and request Self-Cert requests to the Registered Entity (RE). In the next tab 'Review Self-Cert Submittals' you can review Self-Cert requests that are submitted by the RE. The third tab shows the closed Self-Cert requests.

On the following tabs there are these functionalities:

Tab 1 Self-Cert Requests:

Top Left: The first section contains a portlet with a tabular overview of previously sent Self-Cert requests. It is possible to add a new entry to this table by clicking the + sign (left of the portlet table), this is needed for creating a Self-Cert Request from scratch.

Bottom: Once a CEA decides to save a Self-Cert Form it will automatically appear as a draft Self-Cert Form in this section. By clicking on the Self-Cert name in the table a popup window will open the selected draft Self-Cert Form which can be further filled in and sent to the RE.

Tab 2 Review Self-Cert Submittals:

Top: The top section contains a tabular portlet overview of Self-Cert Requests that are being completed by the RE.

Bottom: the bottom section contains Submitted Self-Cert Requests by the RE. From this overview the CEA can review the individual Self-Cert Form.

Tab 3 Closed Self-Cert Requests:

This sections contains a tabular portlet overview containing archived Self-Cert requests. This overview also contains the Self-Cert Forms submitted

DRAFT SELF-CERT REQUESTS

REQUEST ID	REQUEST NAME	FUNCTIONS	STANDARD AND REQUIREMENT	START / DUE DATE	MONITORING PERIOD	CREATED BY
<input type="checkbox"/> SCR / 000011	1DataFeedTest	GO	BAL-001-TRE-1 R6, BAL-001-TRE-1 R7.	14 Jan 2021 14 Jan 2021	11/01/2020 - 12/31/2020	Brenton Matthews
<input type="checkbox"/> SCR / 000012	Test 1	GO	BAL-001-TRE-1 R10.	20 Jan 2021 21 Jan 2021		WECC Editor 1

- 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

Key communication vehicles

- Align newsletter for Regions and registered entities
- Regional Change Agent Network
- Dedicated project page on NERC.com: [Click Here](#)
- Upcoming Compliance Monitoring and Enforcement Program (CMEP) Regional workshops
- Trades meetings
- NERC News
- Social media



Questions and Answers

Background and Reference Material

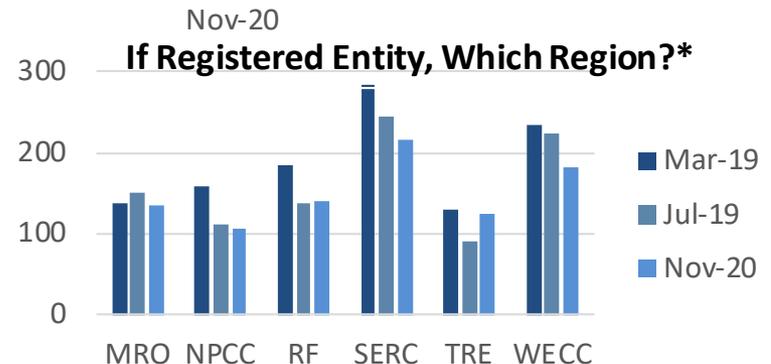
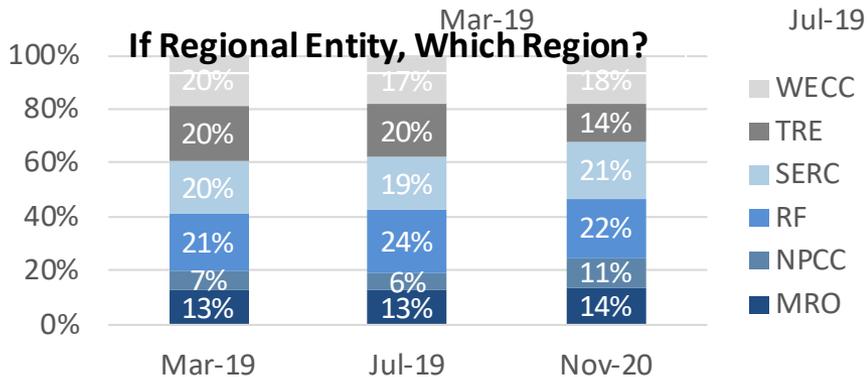
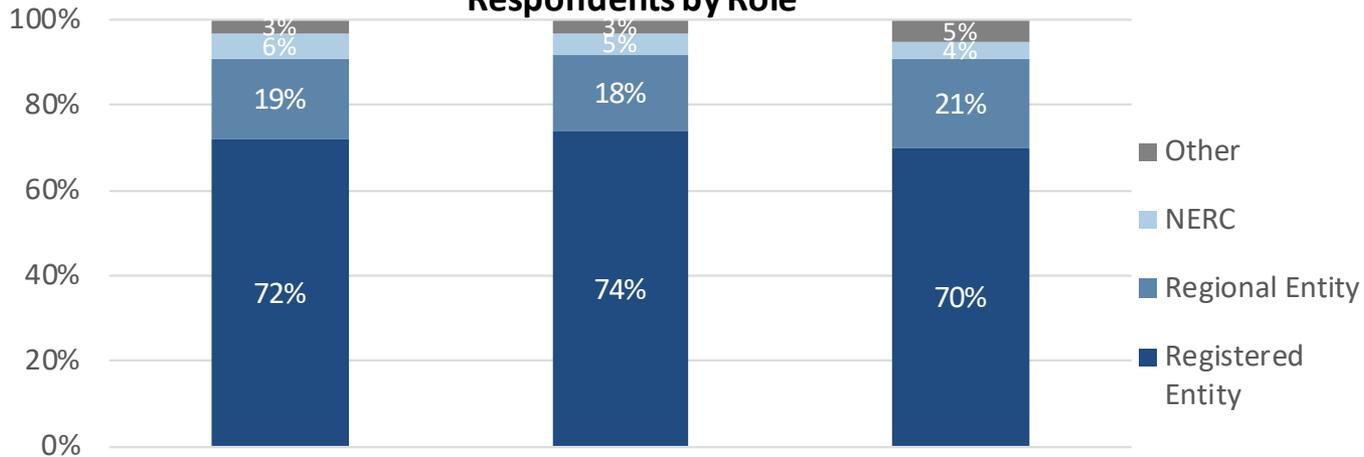
Change Readiness Assessment Full Report

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

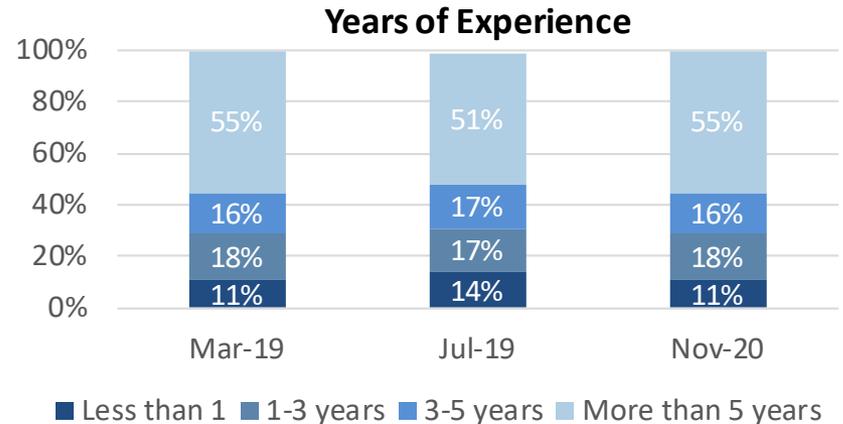
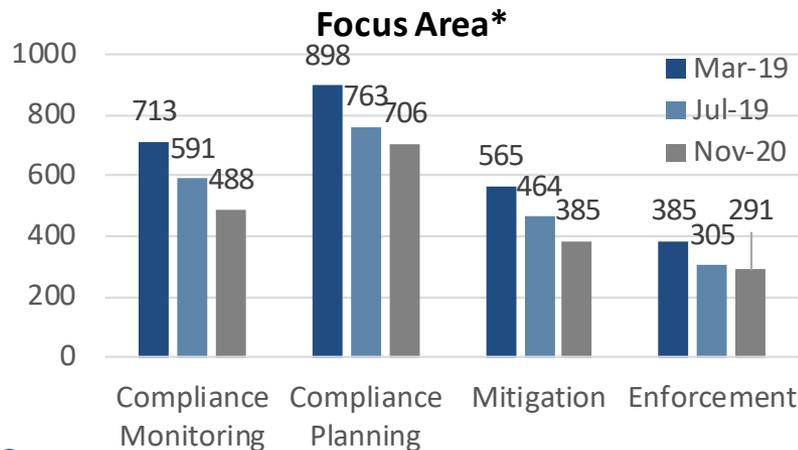
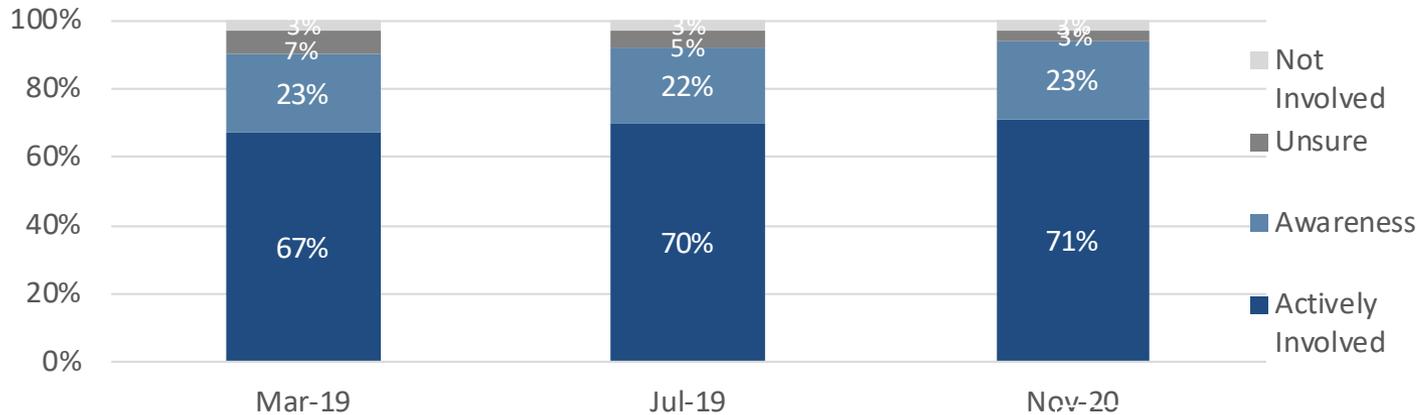


*Indicates respondents were able to select multiple response options

Executive Summary: Demographics

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



*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

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

Sustain Score of 4.0 – 5.0
 Monitor Score of 3.0 – 4.0
 Address Score of 0.0 – 3.0

Favorable
 Unfavorable

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.

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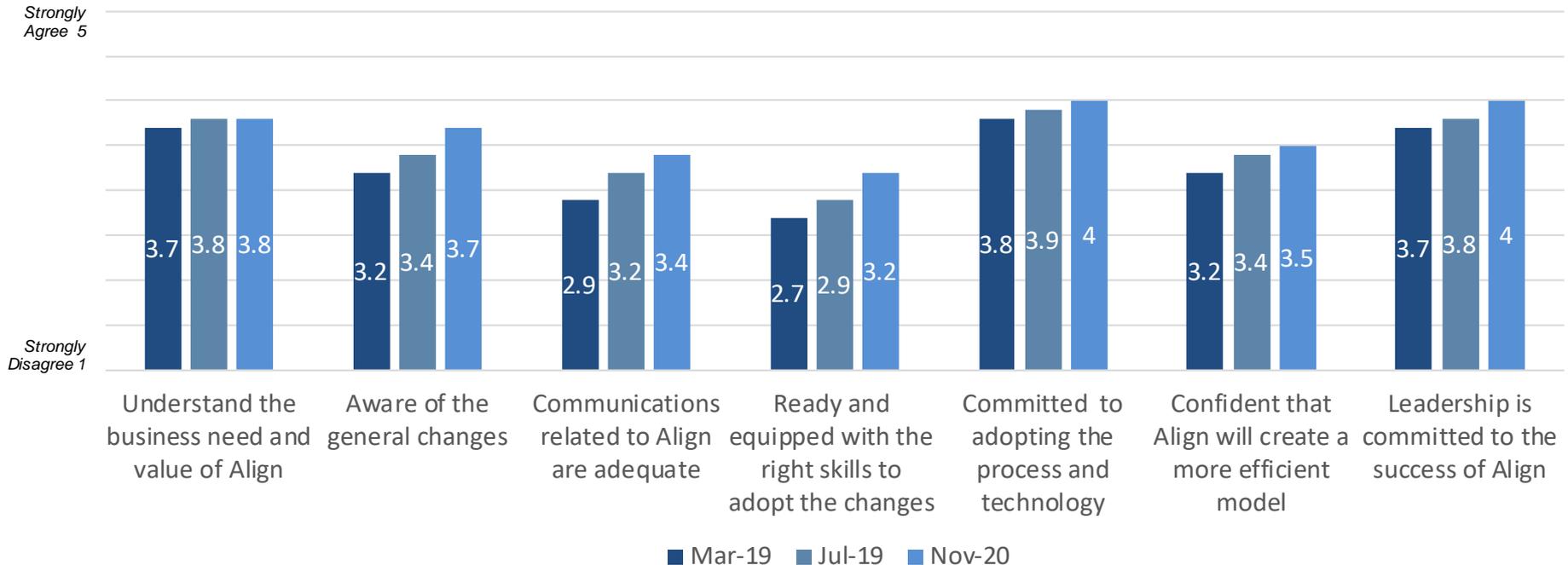
*Highest number of registered entities not familiar with Align are solely registered with SERC (42%) and WECC (22%)

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



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.

NERC Staff

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

SERC Staff

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

MRO Regional Staff

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.

NPCC Staff

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

RF Staff

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

TRE Staff

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.

RF Registered Entity Staff

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

MRO, RF, TRE Registered Entity Staff

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

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

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

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

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

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

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**.

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.

NPCC Staff

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

MRO 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.

NPCC Registered Entity Staff

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

MRO 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.

MRO Registered Entity 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.

RF Staff

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

TRE Registered Entity Staff

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.

Registered Entity Staff (Unspecified Region)

Total Number of Survey Respondents

	Regional Entity	Registered Entity	NERC	Others	Total
Mar-19	228	845	38	67	1178
Jul-19	177	718	28	52	975
Nov-20	191	634	31	47	903

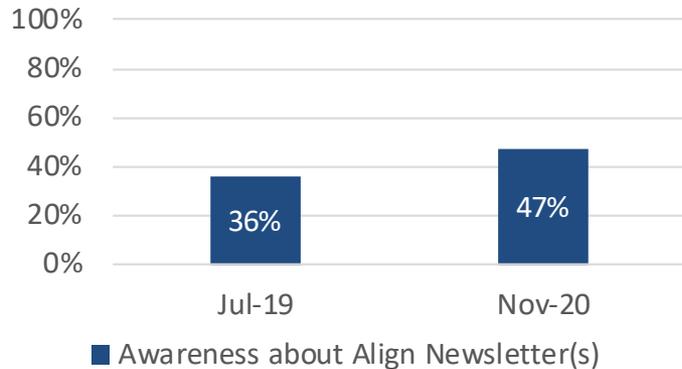
Respondents Listed as “Others” Include –

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

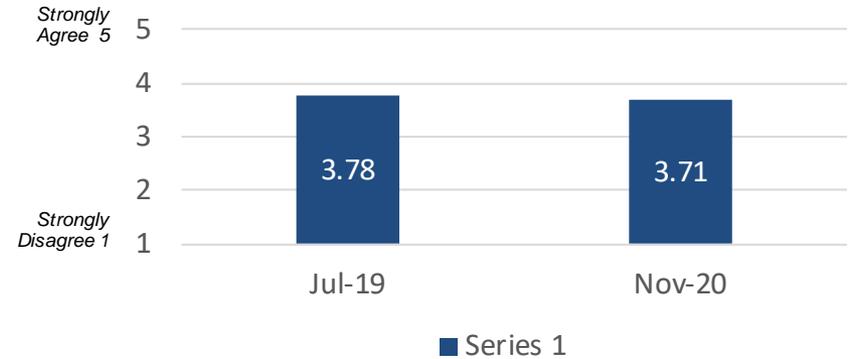
Regional Entity Staff	FRCC	MRO	NPCC	RF	SERC	TRE	WECC	Total
Mar-19	9	30	15	47	37	45	45	228
Jul-19	8	24	11	43	26	35	31	178
Nov-20	-	27	20	41	41	27	35	191

Registered Entity Staff	FRCC	MRO	NPCC	RF	SERC	TRE	WECC	Total
Mar-19	43	137	159	184	283	129	234	834
Jul-19	40	150	110	137	245	90	225	713
Nov-20	-	135	106	139	215	124	183	631

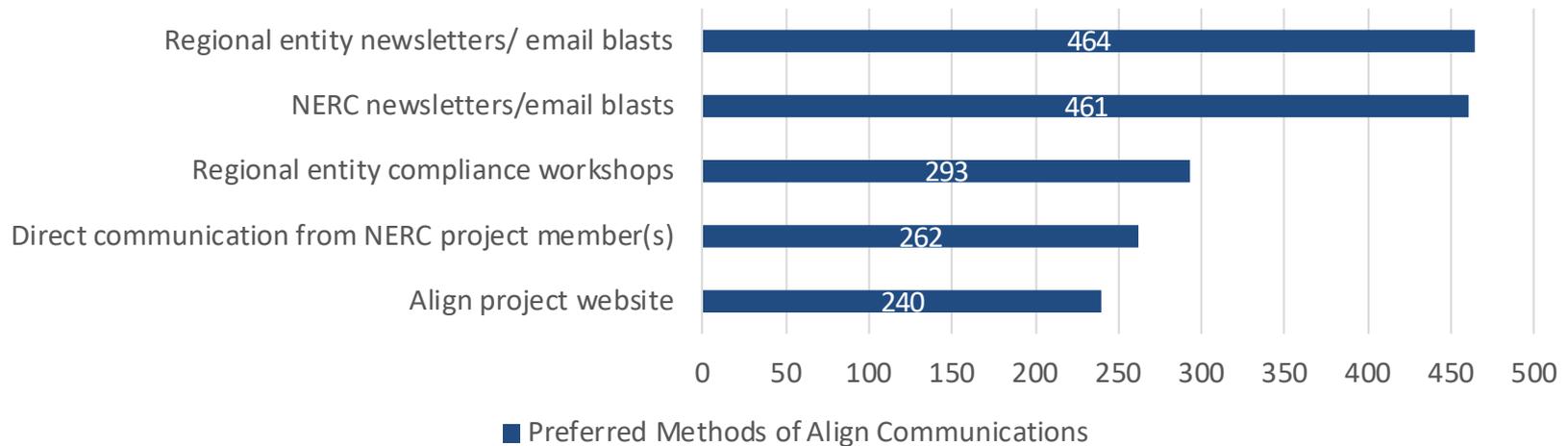
Familiarity with the Bi-monthly Align Newsletter(s) – Launched in May 2019



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



Preferred Methods of Communications Related to Align



Stakeholder Group

Registered Entities

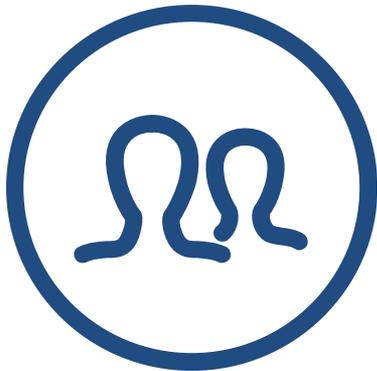


Release 1 Functionality

- 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

Stakeholder Group

Regional Entities



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

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

ERO Enterprise Secure Evidence Locker Update

Stan Hoptroff, Vice President, Business Technology

Justin Lofquist, IT Director

Technology and Security Committee Meeting

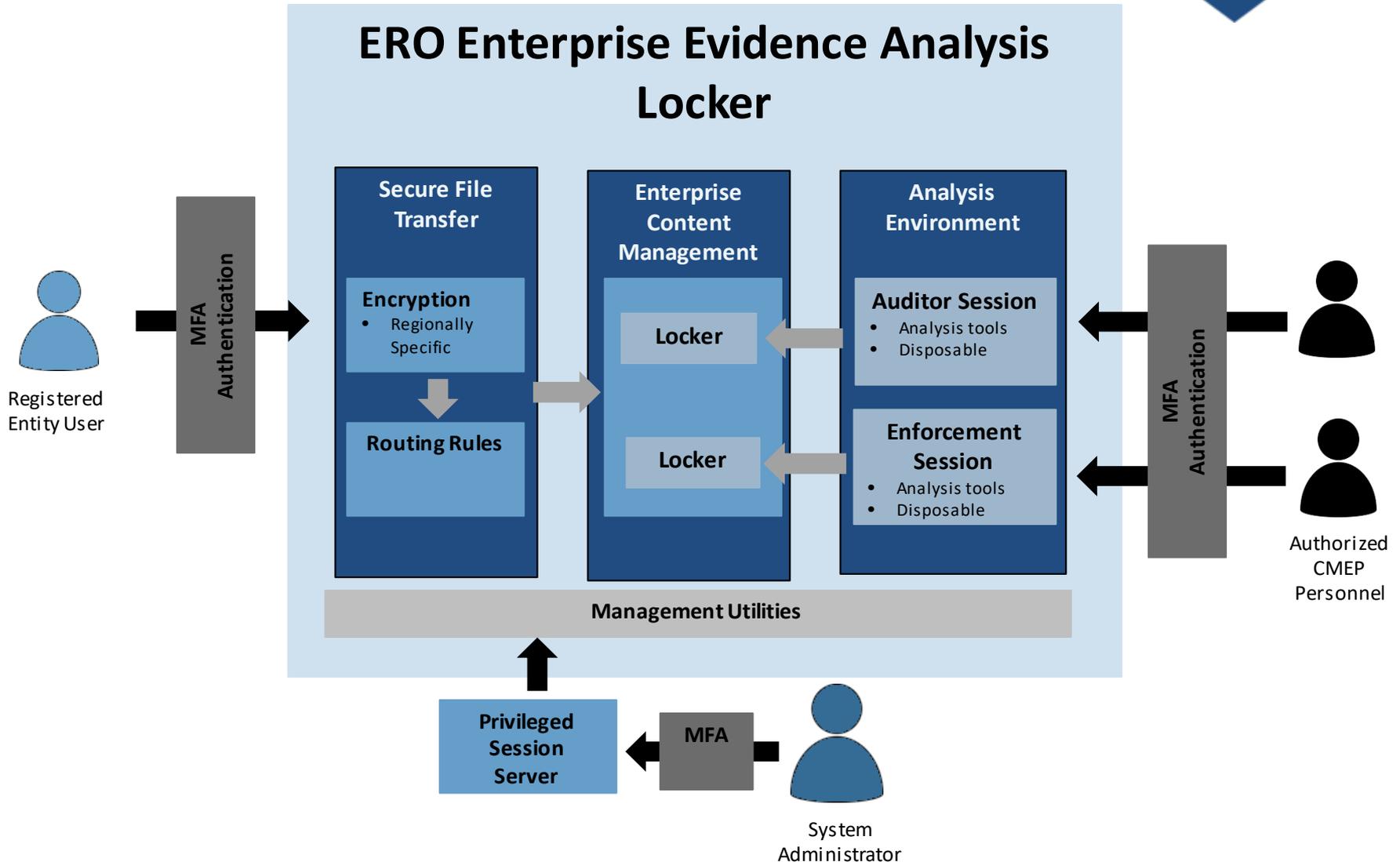
February 3, 2021

RELIABILITY | RESILIENCE | SECURITY



- Solution Overview - Refresher
- Strategic Approach to Security - Talking points
- Current Status
- Review of Potential Risks

- 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



- Formulated on the assumption that the environment can be compromised
- Four foundational concepts, which provide a layered defense posture:
 - Access Controls
 - Multiple sets of credentials with multi-factor authentication; minimum necessary access; separate of duties for privileged activities
 - Isolation
 - 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
 - Asymmetric, strong encryption for data at rest and in transit
 - Monitoring
 - 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
 - Evidence physically separated by Region
 - 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

- Support of new technologies
- Delays created by the COVID-19 pandemic
 - Professional Services (travel and collaboration)
 - Testing and in-person training



Questions and Answers

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

ERO Business Technology Projects Update

Stan Hoptroff, Vice President, Business Technology
Technology and Security Committee Meeting
February 3, 2021

RELIABILITY | RESILIENCE | SECURITY



- 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

- 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