

Staff Report

TO: Board of Directors

FROM: Keane Sommers, P.E., Director of Power Systems
Tina Konkle, Hydroelectric Compliance Analyst

DATE: September 14, 2022

SUBJECT: Nevada Irrigation District Internal Compliance Program 2021
Annual NERC Compliance Self-Assessment Report and Self-
Certification Summaries

HYDROELECTRIC

RECOMMENDATION:

Receive and file the NID NERC Compliance Assessment Report for 2021 as prepared in accordance with the Nevada Irrigation District Internal Compliance Program.

BACKGROUND:

As authorized by NID Board Policy 9400, the NID Internal Compliance Program (Section 5.3) requires that an Annual Compliance Self-Assessment Review be performed. A summary of the results are to be presented to the General Manager and the Board of Directors. The Annual Compliance Self-Assessment is the subject of this agenda item.

Annual Compliance Assessment Summary

Nevada Irrigation District is registered with the North American Electric Reliability Corporation (NERC) as a Generator Owner (GO) and Generator Operator (GOP) in the Western Electricity Coordinating Council (WECC) region. NID is responsible for compliance with NERC and WECC mandatory Reliability Standards as a GO/GOP under the authority of the U.S. Electric Power Reliability Act (and amendments).

In total, approximately 38 Reliability Standards and 138 Requirements were applicable to NID during 2021.

NID has not identified any acts of potential non-compliance for the 2021 calendar year. The attached NID NERC Compliance Assessment Report provides additional detail on the applicable Reliability Standards and Requirements subject to enforcement, and NID's actions to maintain compliance.

NERC Reliability Standards continue to evolve, and the rate of change continues to increase year by year. Next year, new Standards and Requirements could become enforceable and require implementation activities including capital improvements, operations & maintenance changes, and increased monitoring & reporting. As new/updated Standards become enforceable, the changing compliance environment will impact the maintenance of NID's procedures/programs/processes and will require additional training for District operations, maintenance, and compliance staff.

Self-Certification Requirement Summary

There was no self-certification due in 2022 for the 2021 calendar year.

The next NERC/WECC self-certification is due in 2023 for the following NERC Standards during the 2022 calendar year:

- COM-002
- PRC-005
- VAR-002-WECC
- VAR-501-WECC

BUDGETARY IMPACT:

No budgetary impact.

CDK

Attachment: (1)

- NID 2021 NERC Compliance Assessment



Nevada Irrigation District NERC Compliance Assessment

Assessment Prepared on:

August 8, 2022

Prepared By:

Grid Subject Matter Experts

Annual report on compliance with the NERC and Regional Reliability Standards applicable to Nevada Irrigation District for 2021.

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EXECUTIVE SUMMARY

Site Overview

Nevada Irrigation District (NID) is comprised of two NERC-registered generating Facilities: Dutch Flat 2 is rated at 27.3 MVA with a 0.9 power factor for 24.57 MW generating output, and Chicago Park is rated at 41.5 MVA with a 0.9 power factor for 37.35 MW generating output. Both projects are in Nevada County, CA. NID registered as a Generator Owner (GO) and Generator Operator (GOP) in the NERC Compliance Registry on May 15, 2014. NID interconnects with Pacific Gas & Electric Company (PG&E) and resides in the CAISO Balancing Authority Area.

NID and PG&E agreed to allocate the GOP obligations for NID's two registered generation Facilities under a Coordinated Functional Registration (CFR). A CFR is a type of agreement authorized by the NERC Rules of Procedure where two or more entities (parties) agree in writing upon a division of compliance responsibility among the parties for one or more Reliability Standard(s) applicable to a particular function, and/or for one or more Requirement(s)/sub-Requirement(s) within particular Reliability Standard(s).

The current CFR Agreement reaffirms PG&E's role as the Registered GOP for the NID hydroelectric Facilities and limits NID's GOP compliance activities (and associated compliance responsibility) to limited specific activities and circumstances.

Scope

This report represents the annual assessment of NID's compliance with the North American Electric Reliability Corporation (NERC) and Regional mandatory Reliability Standards.¹ This annual assessment is a required recurring compliance activity per the NID Internal Compliance Program (ICP) and is used to apprise NID management of the status of compliance with NID's NERC compliance program.

The report summarizes the reliability compliance efforts put forth by the NID compliance team in 2021 and previews the efforts needed in the year ahead and beyond to comply with the NERC and Regional Reliability Standards. The GridSME compliance team conducted this assessment by reviewing the compliance program evidence located in NID's compliance repository in January of 2021 and follow up responses to requests for more information from GridSME.

Highlights

- Compliance with the NERC Standards continues to present challenges due to the frequency of changes to the requirements. According to the NERC [US Effective Date Status-Functional Applicability spreadsheet](#), 137 requirements applicable to GO and 55 applicable to GOP registered entities were retired in 2021. That sounds good except that all of these requirements were replaced or reorganized resulting in approximately the same number of requirements at the end as there were in the beginning of 2021. Many of those changes required some sort of activity for NID. For minor changes to the

¹ The use of capitalized terms in this document indicates that the term is a defined term from either the [NERC Glossary of Terms Used in Reliability Standards](#) or [Appendix 2 to the NERC Rules of Procedure: Definitions Used in the Rules of Procedure](#).

Requirements, documents were updated. For more extensive changes, new procedures have been developed. There were 38 Reliability Standards and 138 Requirements applicable to NID as a GO/GOP at the end of 2021. The bottom line is that the NERC Standards continue to evolve to address changes in the Bulk Electric System as well as the world in which we live. Beginning in January and wrapping up in July, GridSME together with the NID evaluated compliance with all of the applicable standards.

Findings and Recommendations

The NERC Reliability Standards continue to evolve, and the rate of change is not diminishing. NID retained the support of GridSME for extended compliance support for 2021 as new Standards and Requirements became enforceable and required implementation activities by NID. In addition to maintaining compliance, generating evidence, and periodic reporting required for the currently enforceable Standards, GridSME helps NID stay apprised of developments at FERC, NERC, and the Western Electricity Coordinating Council (WECC).

In 2022 Standard retirements, revisions, and newly enforceable additions will impact the maintenance of NID's procedures/programs/processes and may impose additional training obligations, all of which will be monitored by GridSME in coordination with NID in 2022 to support readiness for upcoming deadlines.

Preparation for WECC Compliance Monitoring Activities

According to the NERC Rules of Procedure, WECC must perform monitoring activities for each registered entity. For entities who are registered as a BA, RC, or TOP, WECC must perform a monitoring activity at least once every 3 years and must include an on-site component. There is no specific NERC requirement regarding the monitoring of GO or GOP entities. WECC is required to produce a Compliance Oversight Plan (COP) and has done so for NID. The plan is based on an Inherent Risk Assessment (IRA) as perceived by WECC. Based on these documents, it is likely that NID will be audited in 2023 and that likelihood will increase each year until WECC performs a NID audit.

In preparation for an audit or other monitoring activity by WECC, GridSME recommends the following activities for Standards & Requirements identified in the COP:

- Updating the language in older attestations
- Prepare Reliability Standard Audit Worksheet (RSAW)
- Review and update the Combined Functional Registration with PG&E

COMPLIANCE ACTIVITIES - YEAR IN REVIEW

Internal Compliance Program (ICP) Activities

On January 22, 2014, NID adopted an ICP which established the Reliability Oversight Compliance Committee (ROCC). A robust ICP, such as the one established by NID, is strongly encouraged by FERC, NERC, and WECC. These regulators believe that a well-designed and implemented ICP can

help Registered Entities prevent, minimize, and mitigate grid reliability issues. Consequently, NERC and WECC therefore assign mitigating credit to entities with effective ICP’s, thereby reducing penalty assessments following compliance violations. In compliance with its ICP, NID’s ROCC met quarterly in 2021 to discuss NERC and WECC reliability compliance and other associated issues affecting NID.

To assess the current state of NID’s compliance activities, GridSME conducted a tabletop “self-assessment” and review of NID’s compliance with the NERC and WECC Reliability Standards applicable to NID’s registrations. GridSME conducted this self-assessment by reviewing NID’s 2021 evidence, as part of the annual compliance review for NID’s self-certification of compliance. NID and GridSME reviewed NID’s compliance with each of the applicable Reliability Standards for the 2021 calendar year. The results of this exercise are detailed below.

NID’s Quarterly ROCC Meetings

NID’s ROCC meets quarterly to discuss compliance program status, coordinate compliance related tasks and discuss upcoming requirements. These meetings are attended by NID compliance personnel and GridSME which has been hired to provide compliance support. During 2021, the ROCC met on February 4, May 6, August 19, and December 2 compliant with the ICP program structure. During the meetings, the group reviewed and discussed operational concerns, reviewed the state of compliance activities, and plans to meet upcoming deadlines. The ROCC continues to be vital to NID’s compliance program.

Self-Reports

NID had no self-reports in 2021.

GENERATOR OWNER RELIABILITY STANDARDS COMPLIANCE

Reliability Standards Applicable to GO Entities in 2021

To meet compliance with applicable in-scope Reliability Standards and their requirements, NID maintains documented processes related to the Reliability Standard requirements (e.g., procedures, plans, programs, and policies), signed attestations, supporting technical evidence (e.g., engineering documentation and analysis), and programmatic evidence (e.g., evidence of completed data submittals). Listed below are the NERC and Regional Reliability Standards that are applicable to NID as a registered GO, and later in this document GOP, for which they maintain evidence of compliance.

Reliability Standard ²	Title	New 2021	Retired 2021
CIP-002-5.1a	Cyber Security — BES Cyber System Categorization		
CIP-003-8	Cyber Security — Security Management Controls		
EOP-004-4	Event Reporting		
FAC-001-3	Facility Connection Requirements		

² Two Standards per row denotes that the Reliability Standard was revised during the compliance period. The most current Standard appears first.

Nevada Irrigation District Annual NERC Compliance Assessment

Reliability Standard ²	Title	New 2021	Retired 2021
FAC-002-2 FAC-002-3	Coordination of Plans for New Facilities Facility Interconnection Studies	4/1/2021	3/31/2021
FAC-003-4	Transmission Vegetation Management		
FAC-008-3 FAC-008-5	Facility Ratings Facility Ratings	10/1/2021	9/30/2021
IRO-010-2 IRO-010-3	Reliability Coordinator Data Specification and Collection	4/1/2021	3/31/2021
MOD-025-2	Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability		
MOD-026-1	Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions		
MOD-027-1	Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions		
MOD-032-1	Data for Power System Modeling and Analysis		
NUC-001-3 NUC-001-4	Nuclear Plant Interface Coordination	4/1/2021	3/31/2021
PRC-001-1.1(ii)	System Protection Coordination		3/31/2021
PRC-002-2	Disturbance Monitoring and Reporting Requirements		
PRC-004-5(i) PRC-004-6	Protection System Misoperation Identification and Correction	4/1/2021	3/31/2021
PRC-004-WECC-2	Protection System and Remedial Action Scheme Misoperation		1/1/2021
PRC-005-6	Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance		
PRC-012-2	Remedial Action Schemes	1/1/2021	
PRC-017-1	Remedial Action Scheme Maintenance and Testing		
PRC-019-2	Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection		
PRC-023-4	Transmission Relay Loadability		
PRC-024-3	Frequency and Voltage Protection Settings for Generating Resources		
PRC-025-2	Generator Relay Loadability		
PRC-027-1	Coordination of Protection Systems for Performance During Faults	4/1/2021	
TOP-001-4 TOP-001-5	Transmission Operations Transmission Operations	4/1/2021	3/31/2021
TOP-003-3 TOP-003-4	Operational Reliability Data	4/1/2021	3/31/2021
VAR-002-4.1	Generator Operation for Maintaining Network Voltage Schedules		
VAR-501-WECC-3.1	Power System Stabilizer (PSS)		

CIP-002-5.1a: Cyber Security – BES Cyber System Categorization

The purpose of CIP-002-5.1a is to identify and categorize BES Cyber Systems and their associated BES Cyber Assets for the application of cyber security requirements commensurate with the adverse impact that loss, compromise, or misuse of those BES Cyber Systems could have on the reliable operation of the BES. Identification and categorization of BES Cyber Systems support appropriate protection against compromises that could lead to misoperation or instability in the BES.

R1: CIP-002-5.1a R1 requires NID to implement a process to identify and document high, medium, and low impact BES Cyber Systems, if any, according to Attachment 1 of the Standard.

NID initially performed the identification and categorization in 2014, modified and updated the categorization in 2015, and again in December 2016. Effective July 1, 2016, the date the CIP version 5 Standards became effective, NID had identified the existence of only low impact BES Cyber Systems at its two BES assets (Dutch Flat-2 and Chicago Park).

R2: CIP-002-5.1a R2 requires NID to review and update, if necessary, the identifications made in R1 at least once every 15 calendar months and obtain the CIP Senior Manager’s approval of the identifications. The 2021 review was conducted and approved by the CIP Senior Manager (Keane Sommers) on August 31, 2021. This review noted no changes to the categorization of NID’s BES assets and they remain low impact BES Cyber Systems. The next approval is due on or before the last day in November 2022.

CIP-003-8: Cyber Security – Security Management Controls

The purpose of CIP-003-8 is to specify consistent and sustainable security management controls that establish responsibility and accountability to protect BES Cyber Systems against compromise that could lead to misoperation or instability in the Bulk Electric System (BES). As a Registered Entity with low impact BES Cyber Systems, R1.2, R2, R3, and R4 are applicable to NID.

R1: CIP-003-8 Requires NID to review and obtain CIP Senior Manager approval at least once every 15 calendar months for one or more documented cyber security policies that collectively address the six key areas below.

- Cyber security awareness;
- Physical security controls;
- Electronic access controls;
- Cyber Security Incident Response;
- Transient Cyber Assets and Removable Media malicious code risk mitigation; and
- Declaring and responding to CIP Exceptional Circumstances.

NID began preparing policies procedures in 2019 to address the six key areas and made updates with the changes to the standard through 2019 and 2020. The CIP Senior Manager signed-off on these CIP-003 policies and plans in December 2019 ahead of the initial January 1, 2020, and subsequent April 1, 2020, enforcement dates. The policies were again reviewed last year and

approved in August 2021 by Keane Sommers, the CIP Senior Manager. This review met the 15-calendar month requirement.

R2: While R1 requires cyber security policies, R2 requires specific cyber security plans and details the criteria that are to be part of those plans to address five of the six key areas from R1. NID established plans to address each of these five areas as they became applicable starting in 2015 and has updated the plans as necessary. No changes to the plans were required in 2021.

Two of the plans require ongoing activities.

- Cyber Security Awareness
- Cyber Security Incident Response

The Cyber Security Awareness plan requires NID to reinforce cyber security practices at least once every 15 calendar months at a minimum.

The NID Cyber Security Awareness plan provided NID personnel with training on 4/8/2021, 7/8/2021, 8/18/2021, and 11/1/2021. The topics covered were:

- Shutting the Door on Open Access to CI (critical information)
- Access Management Program Best Practices
- Advisory CISA Releases Alert on BadAlloc Vulnerability
- Best Practices for managing files, permissions, and info protection via cloud storage

These topics were timely and relevant, both meeting and exceeding the requirement.

The Cyber Security Incident Response plan requires NID to test the plan at least once every 36 calendar months.

NID last performed a test of the incident response plan on February 25, 2020, so testing the plan was not required in 2021. Since this is a 36-month requirement, NID has about six months to complete a tabletop exercise before February 28, 2023.

R3: CIP-003-8 R3 requires NID to identify a CIP Senior Manager and document any changes within 30 calendar days of the change. NID has met R3 by designating Keane Sommers as the CIP Senior Manager. There were no changes to this designation in 2021.

R3: CIP-003-8 R3 requires NID to identify a CIP Senior Manager and document any changes within 30 calendar days of the change. NID has met R3 by designating Keane Sommers as the CIP Senior Manager. There were no changes to this designation in 2021.

R4: CIP-003-8 R4 allows the CIP Senior Manager to delegate certain authority according to a documented plan. Keane Sommers did not delegate any CIP Senior Manager authority during 2021.

EOP-004-4 – Event Reporting

The purpose of EOP-004-4 is to improve the reliability of the Bulk Electric System by requiring the reporting of events by ‘Responsible Entities.

Under the CFR Agreement with PG&E, NID is responsible for EOP-004-4 as it pertains to its own Facilities and operations. Based on GridSME's review at the time this report was prepared, NID has indicated compliance with this standard for the 2021 calendar year.

R1: EOP-004-4 R1 requires NID to have an event reporting Operating Plan in accordance with Attachment 1 of EOP-004-4. NID remained compliant with R1 by maintaining its Event Reporting Operating Plan.

R2: EOP-004-4 R2 requires NID to report events per their event reporting Operating Plan within 24 hours of recognizing an event meeting the threshold for reporting. NID remained compliant with R2 by using the event reporting plan to assess four events that occurred on January 23, May 23, August 20, and September 9 within 2021. Three of the four events were reported according to the event reporting plan. Each of the events involved trespassing but none was considered an event specifically targeting NID or the Bulk Electric System.

NID continues conducting contact validation annually as a best practice to ensure its Event Reporting Plan stays current.

FAC-001-3 – Facility Interconnection Requirements

The purpose of FAC-001-3 is to avoid adverse impacts on the reliability of the Bulk Electric System, by requiring Transmission and Generation Owners to provide the necessary interconnect information to entities seeking to interconnect to existing Facilities.

R2: Requires GOs with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third-party Facility to the [GOs] existing Facility that is used to interconnect to the Transmission system. NID has not entered into an Agreement to study the reliability impact of interconnecting third party Facilities to NID's existing Facilities. Therefore, FAC-001-3 R2 was not applicable to NID during 2021. For the 2021 calendar year, NID created an FAC-001-3 attestation stating this, which has been executed by Keane Sommers.

FAC-002-3 – Facility Interconnection Studies

The purpose of FAC-002-3 is to study the impact of interconnecting new or materially modified Facilities on the Bulk Electric System.

R2: Applies to Generator Owner seeking to interconnect new or materially modify existing generation Facilities. Since NID is not seeking to interconnect any new or modified generation Facilities, this requirement was not applicable in 2021.

FAC-003-4 – Vegetation Management

The purpose of FAC-003-4 is to maintain a reliable electric transmission system by using a defense in-depth strategy to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of those vegetation related outages that could lead to Cascading.

FAC-003-4 Applies to lines that are operated at 200kV or above. NID's gen tie connection to PG&E is operated at 115kV. Therefore, FAC-003-4 is not applicable to any of NID's Facilities. NID has documented this in an attestation signed by Keane Sommers.

FAC-008-5 – Facility Ratings

The purpose of FAC-008-5 is to ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System are based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

R1, R6, R2: FAC-008-5 requires NID to document the determination of its Facility Ratings (R1, R6), and have a documented methodology for determining its Facility Ratings from the step-up transformer up to the point of interconnection (R2). NID documented its Facility Ratings and implemented its Facility Ratings methodology in July 2013. Pertaining to R2, NID did not make any modifications to its Facility Ratings methodology in 2021. NID reviewed and updated its Facility Ratings and its methodology in early 2021 to address changes in both the standard and the WECC audit approach.

R8: NID did not receive any requests from third-party entities pertaining to its Facility Ratings, nor was NID scheduled to provide information to third-party entities in 2021.

IRO-010-2 – Reliability Coordinator Data Specification and Collection

The purpose of IRO-010-2 is to prevent instability, uncontrolled separation, or Cascading outages that adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area.

R3 through R3.3: IRO-010-2 R3 requires GOs and GOPs to submit data to their Reliability Coordinator (RC) as per the RC’s documented data specifications. NID has executed an attestation stating it has not had any affirmative duties under IRO-010-2 or any of the previous version of the Standard. Peak RC as the Reliability Coordinator does not request data directly from NID per the provisions under the Standard. Further, PG&E has agreed, per the CFR, to be the responsible party to perform the GOP requirements under IRO-010-2 on behalf of CP and DF2.

MOD-025-2 – Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability

The purpose of MOD-025-2 is to ensure that accurate information on generator gross and net Real and Reactive Power capability and synchronous condenser Reactive Power capability is available for planning models used to assess Bulk Electric System (BES) reliability.

R1, R2: MOD-025-2 R1 requires a GO to verify the Real Power and Reactive Power and submit the modeling data to their Transmission Planner (TP). PGE is the TP for NID. The table below show the last and prior test dates and submittals by which NID maintained compliance.

Requirement	Facility	Prior Test Date	Last Test Date
R1 – Verify Real Power every 5 years	Chicago Park	11/2016	4/5/2021
	Dutch Flat 2	4/2017	4/5/2021
R2 – Verify Reactive Power every 5 years	Chicago Park	11/2016	4/5/2021
	Dutch Flat 2	4/2017	4/8/2021

MOD-026-1 – Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

The purpose of MOD-026-1 is to verify that the generator excitation control system or plant volt/var control function1 model (including the power system stabilizer model and the impedance compensator model) and the model parameters used in dynamic simulations accurately represent the generator excitation control system or plant volt/var control function behavior when assessing Bulk Electric System (BES) reliability.

In the Western Interconnection, MOD-026-1 is applicable to individual generating units greater than 75 MVA (gross nameplate rating). Therefore, this Standard and its Requirements are not applicable to NID's CP and DF2 generators. NID has documented non-applicability with a MOD-026-1 attestation signed by Keane Sommers.

MOD-027-1 – Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions

The purpose of MOD-027-1 is to verify that the turbine/governor and load control or active power/frequency control model and the model parameters, used in dynamic simulations that assess Bulk Electric System (BES) reliability, accurately represent generator unit real power response to system frequency variations.

Just the same as MOD-026-1, MOD-027-1 is applicable to individual generating units in the Western Interconnection greater than 75 MVA (gross nameplate rating). Therefore, this Standard and its Requirements are not applicable to NID's CP and DF2 generators. NID has documented non-applicability with a MOD-027-1 attestation signed by Keane Sommers.

MOD-032-1 – Data for Power System Modeling and Analysis

The purpose of MOD-032-1 is to establish consistent modeling data requirements and reporting procedures for development of planning horizon cases necessary to support analysis of the reliability of the interconnected transmission system.

R2: MOD-032-1 R2 requires a GO to provide steady-state, dynamics, and short circuit modeling data to its Planning Coordinator (PC) (CAISO) and Transmission Planner (TP) (PG&E), as scheduled or upon request. The relevant data was last provided to CAISO and PG&E under the WECC Generating Unit Model Validation Policy. For CP, there have been no changes to the unit nor the CP steady-state and dynamic files since that time.

In November 2020, NID compiled and responded to a DF2 generator model data request and received feedback the data was deficient. On 11/18/2020, NID resubmitted the data and on 3/11/2021 received an email that there were deficiency issues with the data. NID resolved those issues and resubmitted the package on 4/28/2021. The deficiencies were resolved but data quality concerns were noted by PG&E on 9/1/2021. Those issues were resolved and NID resubmitted the package on 9/28/2021. On August 12, 2022, NID received a Letter of Compliance from CAISO for the Dutch Flat 2 generator modeling.

NUC-001-4 – Nuclear Plant Interface Coordination

The purpose of NUC-001-4 is to ensure coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.

NID does not provide services related to Nuclear Plant Interface, therefore NUC-001-4 is not applicable to NID as a GO.

PRC-004-6– Protection System Misoperation Identification and Correction

The purpose of PRC-004-6 is to identify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.

R1 through R6: In the event of a Misoperation, all requirements of the standard are applicable to NID as a GO. For each BES interrupting device operation, NID is required to determine if a Misoperation has occurred. If it is determined that a Misoperation occurred, NID is required to notify affected parties, determine the cause of the Misoperation, and develop and implement a Corrective Action Plan to avoid similar Misoperations in the future. NID is also required to report all Protection System operations quarterly via NERC’s MIDAS portal.

NID maintains a detailed log of Protection System operations, and each operation is analyzed to determine its appropriateness. When an operation event occurs, NID prepares a report to document the event, evaluate whether the event was a correct operation or a Misoperation, and if the operation was a Misoperation, creates a corrective action report (CAP) to remedy the root of the misoperation. The report is then reviewed and approved. These event reports are on file for each operation during 2021.

All Protection System operations that occurred in 2021 were evaluated per NID’s procedures and none were determined to be a Misoperation. NID completed all quarterly MIDAS submissions as required.

PRC-005-6 – Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance

The purpose of PRC-005-6 is to document and implement programs for the maintenance of all Protection Systems, Automatic Reclosing, and Sudden Pressure Relaying affecting the reliability of the Bulk Electric System (BES) so that they are kept in working order. PRC-005-6 went into effect January 1, 2016. PRC-005-6 brought Automatic Reclosing and Sudden Pressure Relaying Devices in-scope for PRC-005.

R1: PRC-005-6 R1 requires NID to develop and maintain a Protection System Maintenance Plan (PSMP). NID updated their PSMP in 2016 and in 2020 to meet the requirements as the Standard evolved. No changes to the PSMP were required in 2021.

R2, R4: PRC-005-6 R2 and R4 are applicable to entities using performance-based maintenance intervals in its PSMP. NID has decided to follow a time-based maintenance interval program, therefore, NID maintains an attestation stating that R2 and R4 are not applicable to NID. In 2021, there were no changes made to the maintenance schedules for applicable facilities.

R3: PRC-005-6 R3 is applicable to entities utilizing time-based maintenance intervals. NID utilizes time-based maintenance intervals, and therefore, is obligated under R3 to perform the minimum

maintenance activities within the maximum maintenance intervals provided by the standard. Additionally, NID did not identify any monitoring attributes for its Protection Systems, and therefore uses a more conservative, shorter maintenance time interval for unmonitored components.

NID performed all required maintenance activities in 2021 in a timely manner. NID's compliance team maintains an updated evidence folder of all maintenance and testing activities performed by NID maintenance and operations staff.

R5: PRC-005-6 R5 requires NID to correct identified Unresolved Maintenance Issues, should any arise. There was one (1) Unresolved Maintenance Issue identified in 2020 relating to an alarm contact for a BES relay not being wired into the SCADA system. A corrective action plan was implemented, and the issue was resolved in 3/20/2021.

PRC-012-1 Remedial Action Schemes

The Purpose of PRC-012-1 is to ensure that Remedial Action Schemes (RAS) do not introduce unintentional or unacceptable reliability risks to the Bulk Electric System (BES). NID does not own any equipment which would identify it as a RAS-entity and thereby trigger applicability for PRC-012-2. GridSME recommends that the PRC-017 Attestation be updated to include PRC-012-1 since NID does not own a RAS.

PRC-017-1 – Remedial Action Scheme Maintenance and Testing

The purpose of PRC-017-1 is to ensure that all Remedial Action Schemes (RAS) are properly designed, meet performance requirements, and are coordinated with other protection systems. To ensure that maintenance and testing programs are developed and misoperations are analyzed and corrected.

This standard is very similar to PRC-005, in that it requires a maintenance and testing plan, but is only for RAS. NID maintains an attestation on file stating that does not own any RAS and is therefore not subject to this standard.

PRC-019-2 – Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection

The purpose of PRC-019-2 is to verify coordination of generating unit Facility or synchronous condenser voltage regulating controls, limit functions, equipment capabilities and Protection System settings.

R1: PRC-019-2 R1 requires NID to coordinate its applicable voltage regulating system controls with the settings of the applicable Protection Systems at least every five years.

R2: PRC-019-2 R2 requires NID to perform the coordination described in R1 upon implementation of systems or settings that will affect the current coordination.

The coordination analysis of CP's voltage regulating system controls with the settings of the applicable Protection Systems was documented in 2016 by Sage Engineers with the excitation upgrade. The finding of this coordination analysis is that CP relays and in-service limiters were properly coordinated. A coordination study was performed by GS Engineering in 2021 per the five year requirement. The findings of the 2021 study found the Volts per Hertz setting on the

11TA protective relay to be non-compliant, this was due to an incorrect voltage transformer (VT) secondary setting not reflecting the Main GSU's DETC tap setting of 122.5kV. The recommended setting change was made, and a revised PRC-019 report confirmed that CP relays and in-service limiters were properly coordinated.

The coordination analysis of DF2's voltage regulating system controls with the setting of the applicable Protection Systems was performed in 2017 following the excitation upgrade. In 2019 a follow-up study was performed by Gannett-Fleming to ensure protection setting coordinated with exciter limiters. Recommended changes were implemented on the 11GA and 11GB to ensure compliance with PRC-019-2. During the 2021 PRC-024-3 Study it was found that the Nominal Voltage setting on 11TB was incorrect because it didn't match the DETC tap position of the Main GSU, this setting was corrected. However, this nominal setting does affect Volts/Hz protection in 11TB which is a required protective element of PRC-019-2. The correct DETC tap was utilized in the 2019 report, but the transformer relays were not included in that study. NID plans to have a new PRC-019-2 Study performed by the end of 2022 to include the transformer relays.

PRC-023-4 – Transmission Relay Loadability

The purpose of PRC-023-4 is to maintain protective relays within the following parameters: “protective relay settings shall not limit transmission loadability; not interfere with system operators' ability to take remedial action to protect system reliability and; be set to reliably detect all fault conditions and protect the electrical network from these faults.”

PRC-023-4 addresses transmission relay loadability, but only applies to a limited set of generators that have a load-responsive phase protection system(s). NID does not own any of the equipment listed in Attachment A of this Standard, and is, therefore, not an applicable entity for the Standard.

To verify this, NID has reviewed CAISO's “CAISO List of Facilities below 100 kV Potentially Subject to PRC-023-4 Transmission Relay Loadability for Compliance with Requirements R6, R6.1, R6.2 of PRC-023-4” document as well as “CAISO's List of Facilities at 100 kV to 200 kV Subject to PRC-023-4 Transmission Relay Loadability for Compliance with R6, R6.1, R6.2 of PRC-023-4” dated 12/7/2020 and verified that NID facilities are not listed. Additionally, NID maintains a PRC-023-4 attestation for 2021 affirming this fact.

PRC-024-2 – Generator Frequency and Voltage Protective Relay Settings

The purpose of PRC-024-2 is to Ensure Generator Owners set their generator protective relays such that generating units remain connected during defined frequency and voltage excursions.

R1 through R4: PRC-024-2's implementation plan required that GOs meet R1 through R4 for at least 60% of its applicable Facilities by July 1, 2017, at least 80% by July 1, 2018, and 100% by July 1, 2019. Requirements R1 and R2 require a GO to set any frequency and voltage protective relaying to not trip in the “no-trip zone” designated by the Standard. Requirement R3 requires a GO to document and communicate to its PC and TP if it is unable to set its protective relaying to not trip in the “no trip zone,” while R4 requires the GO to provide its trip settings to a PC or TP upon request.

For 2021 NID reports two relay settings changes – one at CPPH on relay 11TA and one at DF2 on relay 11TB. An attestation documents that there were no requests received from the PC or TP for relay setting during this time.

NID had PRC-024 studies performed in 2021 per the 5-year requirement at both CP and DF2 by GS Engineering, NID requested the studies meet the future compliance requirement with PRC-024-3. The initial study revealed protective element Volts/Hertz non-compliant on 11TA at CP and 11TB at DF2, this was based upon the nominal voltage setting not reflecting the Main GSU's DETC tap position. The settings were corrected and revised studies were submitted to NID by GS Engineering. NID's next PRC-024 study will be due in 2026.

PRC-025-2 – Generator Relay Loadability

The purpose of PRC-025-2 is to set load-responsive protective relays associated with generation Facilities at a level to prevent unnecessary tripping of generators during a system disturbance for conditions that do not pose a risk of damage to the associated equipment.

R1: PRC-025-2 has only one requirement, R1, which requires a GO to apply the settings provided in Attachment 1 of the standard to each of their applicable protective relays while maintaining reliable fault protection.

NID owns load-responsive protective relays regular in scope of this requirement and therefore performs validations to ensure compliance with the requirement. The last validation was performed in December 2021 for both CP and DF2.

PRC-026-1 - Relay Performance During Stable Power Swings

The purpose of PRC-026-1 is to ensure that load-responsive protective relays are expected to not trip in response to stable power swings during non-Fault conditions. PRC-026-1 went into effect January 1, 2018. GO applicable requirements within the Standard are enforceable January 1, 2020; applicability is dependent on notification (annually) from the GO's Planning Coordinator (PC) pursuant to R1.³

R2: Requirement R2 requires a GO to determine within 12 calendar months of notification from its PC, whether its identified load-responsive protective relay(s) applied to its BES Element meets the criteria in PRC-026-1 – Attachment B (for BES Elements not evaluated pursuant to PRC-026-1 – Attachment B in the last five calendar years). For Generator, transformer, or transmission line BES Elements that trip in response to stable or unstable power swings due to the operation of its protective relay(s), Requirement R2.2 requires GOs to determine whether its load-response relay(s) applied to that BES Element meets the criteria in PRC-026-1 – Attachment B.

R3: If a GO determines a load-responsive protective relay does not meet the PRC-026-1 – Attachment B criteria as per Requirement R2, Requirement R3 requires the GO to develop a Corrective Action Plan (CAP) within six full calendar months of that determination. The CAP must meet one of the criteria listed in the PRC-026-1 R3 Requirement description.

R4: Requirement R4 requires the GO to implement the CAP developed per Requirement R3 and update each CAP if actions or timetables change until all actions are complete.

Based on GridSME’s review at the time this report was prepared, NID has not received notice from its PC that it has BES generation Elements identified pursuant to Requirement R1. An attestation has been created and made effective January 1, 2020, affirming NID’s PC, CAISO, did not notify NID that it has applicable BES Elements applicable to PRC-026-1 and that NID has no compliance obligation pursuant to Requirement R2.1, and subsequent obligations required under R3 and R4.

PRC-027-1 – Coordination of Protection Systems for Performance During Faults

The Purpose of PRC-027 is to maintain the coordination of Protection Systems installed to detect and isolate Faults on Bulk Electric System (BES) Elements, such that those Protection Systems operate in the intended sequence during Faults. This Standard became effective on April 1 of 2021.

R1: Requires that the GO have a plan in place to coordinate relay settings such that they operate in the intended sequence during faults. NID combined numerous separate procedures regarding relay settings into an overarching Protection System Coordination Procedure which became effective on March 31, 2021, ahead of the April requirement.

R2: Requires the performance of a Protective Relaying Study every six years or if a change in fault current of 15% or greater due to system changes. To establish a baseline coordination study, NID began preparing for compliance with the requirement of this standard in June of 2020. NID worked with PG&E to acquire the Aspen One-line files and provided these along with NID relay settings to GS Engineering. PG&E verified DF2 to be coordinated on March 29, 2021. CP 111LA/LB required additional correspondence regarding protection methodology and was verified to be coordinated on August 4, 2021.

TOP-003-4 – Operational Reliability Data

The purpose of TOP-003-4 is to “ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.”

R5 through R5.3: TOP-003-4 R5 is the only TOP-003 requirement applicable to GOs. It requires that a GO receiving a data specification in Requirement R3 or R4 satisfy the data request obligation using a mutually agreeable format, process for resolving data conflicts, and security protocol. CAISO’s TOP-003-4 Data Specifications procedure 3140, and the associated 3140A attachment (CAISO’s TOP-003 data specifications documents), are applicable to NID as a GO in CAISO’s BA territory. In the CAISO 3140A Operating Procedure Attachment, only request number 6.8.1 applies to a GO. NID meets the data request 6.8.1 as it has provided CAISO with CP and DF2’s connectivity, gross and net MW maximum, and reactive capabilities, MVAR minimum and maximum capabilities, a list of units normally on AVR, and voltage setpoints with high and low ranges representing voltage regulation criteria.

VAR-002-4.1 – Generation Operation for Maintaining Network Voltage Schedules

The purpose of VAR-002-4.1 is to “ensure generators provide reactive support and voltage control, within generating Facility capabilities, in order to protect equipment and maintain reliable operation of the Interconnection.”

R5 and R6: VAR-002-4.1 R5 and R6 requires GOs to provide their Transmission Operator (TOP) and TP with certain information regarding its step-up and auxiliary transformers within 30 calendar days of a request and ensure that transformer tap positions are changed according to the specifications provided by the TOP. NID received no request from its TOP regarding step-up or auxiliary transformer information and made no changes to transformer tap positions or settings for the year 2021.

VAR-501-WECC-3.1 – Power System Stabilizers (PSS)

The purpose of Regional Reliability Standard VAR-501-WECC-3.1 is to ensure the Western Interconnection is operated in a coordinated manner under normal and abnormal conditions by establishing the performance criteria for WECC power system stabilizers.

NID owns and maintains PSS at both DF2 and CP.

NID upgraded the excitation control at CP in 2016 which included the addition of the PSS feature. This was completed ahead of the current version of the Standard and was therefore in compliance from its enforcement date.

As the DF2 excitation system was upgraded in October 2017, R4 became applicable to NID. NID had 180 days from that date to activate the PSS feature. February 2018 NID activated the PSS feature meeting the 180-day timeframe stipulated in R4.

R1: VAR-501-WECC-3.1 R1 requires a GO provide its TOP with the GO’s written Operating Procedure or other document(s) describing those known circumstances during which the GO’s PSS will not be providing an active signal to the Automatic Voltage Regulator (AVR). Further, R1 also requires a GO provide the same Operating Procedure or other document to its TOP within 180 days of a new PSS’s Commercial Operation date, or any changes to the PSS operating specifications. NID did not enact any changes to its VAR-501-WECC-3.1 Operating Procedure in 2021.

R3: VAR-501-WECC-3.1 R3 places PSS tuning requirements on the GO. The DF2 PSS was installed in February 2018 and NID was able to meet the R3 tuning requirements at both DF2 and CP. NID reports no changes to the PSS tuning for the year 2021.

R4: The enforcement of requirement VAR-501-WECC-3/3.1 R4 in 2017 forced NID into a material capital expenditure and the alteration of an outage in February 2018. R4 requires a GO to install and complete start-up testing of a PSS on its generator within 180 days of either of the following events (phased-in during 2017):

- The GO connects a generator to the BES, after achieving Commercial Operation, or
- The GO replaces the voltage regulator on its existing excitation system, after achieving Commercial Operation for its generator that is connected to the BES.

NID had no changes to the PSS at either CP or DF2.

R5: VAR-501-WECC-3.1 R5 requires a GO to repair or replace a PSS within 24 months of that PSS becoming incapable of meeting the tuning requirements specified in R3. NID reports that the PSS remained online and synchronized throughout 2021.

GENERATOR OPERATOR RELIABILITY STANDARDS COMPLIANCE

Reliability Standards Applicable to GOP Entities in 2021

Reliability Standard	Standard Description	CFR Treatment	New 2021	Retired 2021
COM-001-3	Communications	PG&E only		
COM-002-4	Operating Personnel Communications Protocol	PG&E and NID (Normal)		
EOP-004-4	Event Reporting	N/A		
EOP-005-3	System Restoration from Blackstart Resources	N/A		
IRO-001-4	Reliability Coordination – Responsibilities and Authorities	PG&E only		
NUC-001-3 NUC-001-4	Nuclear Plant Interface Coordination	N/A	4/1/2021	3/31/2021
PER-005-2	Operations Personnel Training	N/A	--	3/31/2021
PER-006-1	Specific Training for Personnel		4/1/2021	
PRC-001-1.1(ii)	System Protection Coordination	PG&E and NID (Normal and Partial)		3/31/2021
TOP-001-4 TOP-001-5	Transmission Operations	PG&E only	4/1/2021	3/31/2021
TOP-003-3 TOP-003-4	Operational Reliability Data	PG&E and NID (R5 Normal for both PG&E and NID w/ individual DR items partial or PG&E-full depending on the DR#)	4/1/2021	3/31/2021
VAR-001-5	Voltage and Reactive Control	PG&E only (E.A.17 N/A)		
VAR-002-4.1	Generator Operation for Maintaining Network Voltage Schedules	PG&E and NID (R1-R3: PG&E Full; R4: Partial)		

Reliability Standard	Standard Description	CFR Treatment	New 2021	Retired 2021
VAR-501-WECC-3.1	Power System Stabilizer (PSS)	PG&E and NID (Partial)		

COM-001-3 – Communications

The purpose of COM-001-3 is to ensure that there are Interpersonal Communication capabilities in place to maintain reliability.

This standard requires a GOP to maintain Interpersonal Communication capabilities with its BA and TOP. Additionally, if a failure of those capabilities is detected the GOP is required to work with the affected entity(ies) to restore those capabilities. This requirement is to be performed solely by PG&E under the terms of the CFR agreement. NID reports no changes to Interpersonal Communications capability with PG&E or with its field personnel for the year 2021.

COM-002-4 – Operating Personnel Communications Protocol

The purpose of COM-002-4 is to reduce the risk of miscommunication during the issuance of an Operating Instructions which could impact BES reliability and employee safety.

The standard requires that a GOP train all applicable operating personnel to properly receive “oral two-party, person-to-person” Operating Instructions and, during an emergency, follow three-part communication protocols. Both PG&E and NID separately and wholly maintain compliance to this Standard under the terms of the CFR Agreement. PG&E and NID are both required to comply with COM-002-4 GOP requirements (“Normal”).

R3: COM-002-4 R3 requires NID to conduct initial three-part communication training for each of its operating personnel who can receive an oral two-party, person-to-person Operating Instruction prior to that individual operator receiving an oral two-party, person-to-person Operating Instruction. NID delivers three-part communications training to all new operating personnel before they begin normal, unsupervised work.

In 2021, NID added one new operator. The operator received COM-002 three-part communication training on July 22, 2021, prior to performing unsupervised operations as required by the standard.

R6: COM-002-4 R6 requires NID operators use three-part communication during the issuance of an Operating Instruction. NID operators are trained on when to use 3-part communication and are taught to denote the use of 3-part communication on a call by marking log entries as “3PC” in their log journal. NID reports receiving no Operating Instruction during an emergency for the year 2021.

EOP-004-4 – Event Reporting

The purpose of EOP-004-4 is to improve reliability of the BES by requiring the reporting of events by Responsibly Entities. This requirement is applicable to both GO and GOP.

R1: Requires that NID have an event reporting Operating Plan that includes protocols for reporting to the ERO and other organizations such as the Regional Entity, law enforcement, and government authorities. NID ROCC maintains an Operating Plan in accordance with this requirement and performs validation and updates of reporting entities' contact information.

R2: Requires NID to report events per their event reporting Operating Plan within 24 hours of recognizing an event meeting the threshold for reporting. NID remained compliant with R2 by using the event reporting plan to assess four events that occurred in 2021. Three of the four events were reported according to the event reporting plan. Each of the events involved trespassing but none was considered an event specifically targeting NID or the Bulk Electric System. The events are listed below.

- 1/23/2021 – CP Flume Trespass – Reported to DOE and Nevada County Sheriff
- 5/23/2021 – YB-196 Door Handle - Not Reported but discussed with DOE
- 8/20/2021 – CPPH Fence - Reported to DOE
- 9/9/2021 – CPPH Fence – Reported to DOE

EOP-005-3 – System Restoration from Blackstart Resource

The purpose of EOP-005-3 is to Ensure plans, Facilities, and personnel are prepared to enable System restoration from Blackstart Resources to assure reliability is maintained during restoration and priority is placed on restoring the Interconnection.

EOP-005-3 addresses system restoration from a Blackstart Resource. Except for R18, the requirements addressing GOPs and Blackstart Resources are not applicable to NID. NID does not own or operate Blackstart units. NID maintains an attestation on file documenting this fact.

R18: Requires NID to participate in its Reliability Coordinator's restoration drills, exercises, or simulations as requested by the Reliability Coordinator (RC). NID did not receive a request from its RC to participate in any such drills during 2021, and maintains an attestation signed by Keane Sommers stating that fact.

IRO-001-4 – Reliability Coordination – Responsibilities and Authorities

The purpose of IRO-001-4 is to “establish the responsibility of Reliability Coordinators to act or direct other entities to act.”

R2 and R3: Require a GOP to comply with its RC's Operating Instructions unless such actions would violate safety, equipment, or regulatory or statutory requirements, and for the GOP to notify the RC if it cannot follow the Operating Instruction.

Under the terms of the CFR Agreement, PG&E has accepted full responsibility for the GOP-applicable Requirements in IRO-001-4. Consequently, NID does not need to perform any actions to comply with this Standard.

NUC-001-4 – Nuclear Plant Interface Coordination

The purpose of NUC-001-4 is to “[require] coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.”

NID does not provide services related to Nuclear Plant Interface, therefore NUC-001-4 is not applicable to NID as a GOP.

PER-006-1 – Specific Training for Personnel

The purpose of PER-006-1 is to ensure that personnel are trained on specific topics essential to reliability to perform or support Real-time operations of the Bulk Electric System.

NID has a training program in place which previously fulfilled the requirements of the now retired standard PRC-001-1.1(ii). This training program ensures that personnel are aware of the purpose and limitation of the protections systems and Remedial Actions Schemes (RAS) applied.

PER-005-2 – Operations Personnel Training

The purpose of PER-005-2 is to “ensure that personnel performing or supporting Real-time operations on the Bulk Electric System are trained using a systematic approach.”

R6: Requires a GOP to use a systematic approach to the development and implementation of training to applicable operating personnel. This Standard is applicable to GOP “dispatch personnel at a centrally located dispatch center who receive direction from the GOP’s RC, BA, TOP, or TO, and who “may develop specific dispatch instructions for plant operators under their control.”

NID does not have dispatch personnel at a centrally located dispatch center and therefore does not meet applicability criteria for this requirement. NID has documented this determination in an attestation.

TOP-001-5 – Transmission Operations

The purpose of TOP-001-5 is to prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.

TOP-001-5 requires a GOP to comply with its TOP and BA’s Operating Instructions unless such actions would violate safety, equipment, or regulatory or statutory requirements, and for the GOP to notify the RC if it cannot follow the Operating Instruction. This Standard mirrors IRO-001-4 but refers to the TOP and BA rather than the RC.

Under the terms of the CFR Agreement PG&E has accepted full responsibility for the GOP-applicable Requirements under TOP-001-5. Consequently, NID does not need to perform any actions to comply with this Standard.

TOP-003-4 – Planned Outage Coordination

The purpose of TOP-003-4 is to ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.

R5 through R5.3: Are the only Requirements applicable to GOPs under TOP-003-4 and requires a GOP receiving a data specification in Requirement R3 or R4 to satisfy the data request (DR) obligation using a mutually agreeable format, process for resolving data conflicts, and security protocol. CAISO's TOP-003-4 Data Specifications procedure 3140, the associated 3140A attachment, are applicable to NID as a GOP in CAISO's BA territory. PG&E and NID are responsible for complying with R5 as per the CFR ("Normal" responsibility for each).

Under the terms of the PG&E CFR, NID has full responsibility for compliance with one and partial responsibility for compliance with six CAISO data request and specification requirements. These CAISO generator data request requirements are generally triggered upon a unit de-rate or outage or an AVR or PSS outage event. Any such events are logged and responded to by NID operating personnel in a timely manner. NID maintains written logs on file of such events. In 2021, there were no changes to the TOP/BA data specifications of CAISO or PG&E with applicability to NID and no reported data requests for 2021.

VAR-001-5 – Voltage and Reactive Control

The purpose of VAR-001-5 is to ensure that voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in Real-time to protect equipment and the reliable operation of the Interconnection.

The Standard imposes two requirements on Western Interconnection GOPs in the Equivalent Action Section (E.A.S) having the same impact as a Requirement and are employed for Regional Variances). Specifically, E.A. 15 – GOPs in WECC must convert each voltage schedule provided by the TOP into the voltage set point for the generator excitation system and per E.A. 17, meet certain control loop specifications if control loops are used external to the Automatic Voltage Regulators to manage MVAR loading. PG&E is responsible for E.A.S. 15 under the terms of the CFR.

Per the CFR, NID is responsible for compliance with E.A.S. 17. NID has an attestation documenting VAR-001-5's non-applicability as no control loops are used to control NID's hydroelectric Facilities.

VAR-002-4.1 – Generator Operation for Maintaining Network Voltage Schedules

The purpose of VAR-002-4.1 is to ensure generators provide reactive support and voltage control, within generating Facility capabilities, in order to protect equipment and maintain reliable operation of the Interconnection.

R1 through R4: VAR-002-4.1 has six Requirements, four of which must be adhered to by GOPs (R1-R4) and two by GOs (R5-R6 - *see also* the VAR-002-4.1 section in the GO Compliance Findings section of this report). Specifically, a GOP must: (R1) operate each generator connected to the interconnected transmission system in the automatic voltage control mode (automatic voltage regulator in service and controlling voltage) with certain limited exceptions; (R2) maintain the generator voltage or Reactive Power schedule (within applicable Facility Ratings) as directed by the TOP; (R3) notify its TOP of a status change on the AVR, power system stabilizer, or alternative voltage controlling device within 30 minutes of the change; and (R4) notify its associated TOP as soon as practical, but within 30 minutes of changes in reactive power capabilities (not including

those conditions listed under R3). Under the terms of the CFR agreement, NID only needs to inform PG&E's Drum Operations Center when an issue arises under R4.

NID has a procedure that memorializes R4. In 2021, there were no reported events that caused a change in reactive capability. CP and DF2's only means of providing reactive power is through their AVRs. NID has an attestation addressing R4 on file.

VAR-501-WECC-3.1 – Power System Stabilizers

The purpose of Regional Reliability Standard VAR-501-WECC 3.1 is to ensure the Western Interconnection is operated in a coordinated manner under normal and abnormal conditions by establishing the performance criteria for WECC power system stabilizers (PSS).

NID owns and maintains PSS at both DF2 and CP. NID installed PSS capabilities on CP in 2016 and DF2 in 2018.

R2: VAR-501-WECC-3.1 R2 is the only GOP-applicable Requirement. Requirement R2 requires a GOP to have its PSS in-service while synchronized, except during a component failure, testing of a BES Element affecting or affected by the PSS, a maintenance event, or as agreed upon by the GOP and the TOP. Further, a PSS that is out of service for less than 30 minutes does not create a violation of this Requirement, regardless of cause.

Under the terms of the CFR agreement, PG&E and NID are both responsible for GOP compliance with this standard; PG&E and NID each have partial responsibility for R2 compliance. It is PG&E's responsibility to operate the PSS according to R2, compile the operating data to demonstrate compliance, and notify the TO and NID as soon as practicable if an exception-event occurs. NID is responsible for notifying PG&E if they identify or initiate any of the exceptions noted in the Standard. In 2021, NID did not identify any PSS events that meet the reporting criteria for R2.