

129 FERC ¶ 61,251
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Sudeen G. Kelly, Marc Spitzer,
and Philip D. Moeller.

Pacific Gas and Electric Company

Docket No. EL09-72-000

ORDER ON PETITION FOR DECLARATORY ORDER

(Issued December 17, 2009)

1. On September 3, 2009, Pacific Gas and Electric Company (PG&E) filed a petition for an order declaring that PG&E may recover its costs to develop a regional synchrophasor project (Synchrophasor Project) in PG&E's electric transmission rates. PG&E also requested that the Commission declare that it may recover one hundred percent of abandoned plant costs in the event that the Synchrophasor Project is cancelled for reasons beyond PG&E's control. For the reasons set forth below, we grant PG&E's petition for a declaratory order.

I. Background

2. On July 16, 2009, the Commission issued a statement on Smart Grid Policy.¹ In general, the Policy Statement's aim is to provide "guidance regarding the development of a smart grid for the nation's electric transmission system, focusing on the development of key standards to achieve interoperability and functionality of smart grid systems and devices."² In the Policy Statement, the Commission also adopted an interim rate policy—for the period of time until it adopts interoperability standards—allowing the recovery of Commission-jurisdictional smart grid-related costs if four demonstrations are made. The four demonstrations are (1) the smart grid facilities will advance the policy and goals of section 1301 of the Energy Independence and Security Act,³ (2) the smart grid facilities will not adversely affect the reliability and cybersecurity of the bulk-power system, (3) the applicant has minimized the possibility of stranded investment in smart

¹ *Smart Grid Policy*, 128 FERC ¶ 61,060 (2009) (Policy Statement).

² *Id.* Summary.

³ 42 U.S.C. § 17381 (2008) (EISA).

grid equipment, and (4) the applicant agrees to provide certain information to the Department of Energy Smart Grid Clearinghouse.⁴

3. The Policy Statement provides that applicants under the interim rate policy may use one of two procedures to receive assurance of recovery of future smart grid costs. They may seek a declaratory order, or they may request rate changes under section 205 of the Federal Power Act (FPA).⁵

II. PG&E's Petition

4. PG&E's petition states that its Synchronphasor Project will be developed in conjunction with the Western Electricity Coordinating Council (WECC). According to PG&E, the regional project "will help achieve a more responsive, interactive and transparent electric transmission grid throughout the Western Interconnection."⁶ PG&E plans to invest \$50 million to install or upgrade roughly 25 synchronphasor measurement devices, together with communication infrastructure; it explains that this technology uses time-synchronized measurements of system parameters to inform operators of potential reliability concerns, and to identify actions that can address those concerns. In addition, the project will also help PG&E integrate intermittent and energy-limited renewable generation resources.

5. PG&E states that WECC sought \$25 million in grants from the Department of Energy to fund one-half of PG&E's portion of the project. PG&E will seek recovery of the remainder of the cost through its transmission rates. It plans to spend \$10 million in 2010, \$20 million in 2011, and \$20 million in 2012. Because PG&E's investment will span multiple years, it explains that it filed a petition for a declaratory order, rather than seek rate recovery through a filing under FPA section 205, which would most likely govern its transmission rates for only a one-year period.⁷

6. PG&E's petition in this case seeks the Commission's declaration that PG&E's filing makes the four demonstrations required by our interim rate policy so that PG&E may recover \$25 million in Commission-jurisdictional electric transmission rates when the Synchronphasor Project becomes operational. PG&E states that once the

⁴ Policy Statement, 128 FERC ¶ 61,060 at P 123-126.

⁵ *Id.* P 103 and Federal Power Act, 16 U.S.C. § 824d (2006).

⁶ PG&E Petition at 1.

⁷ *Id.* at 9-10.

Synchrophasor Project becomes operational, it will include the full amount of its investment in its transmission rate filing for that year.⁸

A. Demonstration No. 1: Consistency with Policy and Goals of EISA § 1301

7. PG&E states that it makes the first showing, which requires an applicant to describe how the proposed project is consistent with the policy and one or more of the goals set forth in section 1301 of EISA. That section states that such goals

[I]nclude increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid, dynamic optimization of grid operations and resources, with full cybersecurity, and deployment and integration of distributed resources and generation, including renewable resources, demand side resources, and energy efficiency resources.⁹

8. PG&E states that the Synchrophasor Project will provide real-time data on several key operating measurements, enabling operators to analyze stress on the grid through earlier identification of system problems allowing timely actions to avoid widespread system disturbances and blackouts.¹⁰ PG&E also states that synchrophasor technology will support separation of the power system into islands, which will allow the reduction in frequency and duration of outages.¹¹ Islands will allow operators to better balance load and generation within each island.¹²

9. PG&E states that phasor measurement unit technology can “significantly enhance different types of wide-area protection and control.”¹³ Such technology can prevent or detect adverse effects on reliability by monitoring abnormal angles, grid dynamics, oscillations, line overloads, and voltages, which can facilitate early corrective action.¹⁴

⁸ *Id.* at 11.

⁹ Policy Statement, 128 FERC ¶ 61,060 at P 123.

¹⁰ PG&E Petition at 12.

¹¹ *Id.*

¹² *Id.*

¹³ *Id.* at 13.

¹⁴ *Id.*

10. PG&E also states that the Synchrophasor Project will “dramatically improv[e] the wide area view for system operators” allowing better and more timely awareness of developing events, even beyond its and the grid operator’s current views.¹⁵ Such wide area views will allow adaptive islanding and wide-area control systems throughout the Western Interconnection.¹⁶

11. PG&E last posits that the Synchrophasor Project will “ease the integration of renewable resources by providing more accurate and timelier measurements of system performance.”¹⁷

B. Demonstration No. 2: Non-Adverse Effect on the Reliability and Cybersecurity of the Bulk Power System

12. PG&E states that “[t]he Synchrophasor Project will be developed, installed and maintained in accordance with Commission approved reliability standards.”¹⁸ PG&E also states that the Synchrophasor Project “meets all the cybersecurity requirements referenced in the [Department of Energy’s] Funding Opportunity Announcement,” which are “directly linked to meeting” the North American Electric Reliability Corporation’s (NERC) Critical Infrastructure Requirements. PG&E states that

[I]n addition, the reliability and cybersecurity of the power system will not be jeopardized. Rather, it will be enhanced by the Synchrophasor Project. This project will be engineered to meet the latest NERC cyber security standards and will be able to interface to a future NASPInet infrastructure. The additions to the PG&E system will result in a responsive, flexible, expandable, and cyber-secure system architecture. The Smart Grid functions resulting from this project will all be designed such that the grid has improved resiliency to manmade attacks and natural disasters.¹⁹

13. PG&E further explains the five additional showings a smart grid interim rate policy applicant must make under the Commission’s second demonstration and addresses them. First, PG&E states that the Synchrophasor Project “will maintain the integrity of data communicated between substations and data concentrators through the use of a

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.* at 14.

¹⁸ *Id.*

¹⁹ *Id.*

secure, redundant network between PG&E, the California ISO, and neighboring utilities for sending and receiving real-time data. PG&E intends to expand its list of assets identified as Critical Cyber Assets under the NERC CIP 002 to meet the Synchrophasor Project requirements.”²⁰

14. Second, PG&E states that the Synchrophasor Project will authenticate communications between substations and between substations and data concentrators, via data subscription and publication controls. PG&E states that a device known as a publisher is programmed to share a certain level of information with another device that is programmed to “be the subscriber of the information” and thereby provides for a secure communication.²¹

15. Third, PG&E states that the Synchrophasor Project “has been designed to prevent unauthorized modifications to smart grid devices “in which access is limited to a gateway device, beyond which two-level authentication and device password security is required.”²²

16. Fourth, PG&E states that devices used to implement the Synchrophasor Project are protected from physical attack. The locations for phasor measurement units and phasor data concentrators that are not presently classified as critical assets under NERC CIP 002 will be so classified, if the Synchrophasor Project is approved.²³

17. Fifth, and finally, PG&E states that if synchrophasor projects were attacked, alarms would “immediately inform control centers” of such attacks. “Alarms would be available to the PG&E Telecommunication Control Center if network equipment or computer servers were in an abnormal state.”²⁴

C. Demonstration No. 3: Stranded Cost Potential Minimized

18. PG&E states that it is engaged in the National Institute of Standards and Technology (NIST) smart grid standards development process, and that it has participated

²⁰ *Id.* at 15.

²¹ *Id.* at 15-16.

²² *Id.* at 16.

²³ *Id.*

²⁴ *Id.*

in all related NIST workshops, contributing to many of the standards defined in the NIST Smart Grid Interoperability Roadmap.²⁵

19. PG&E asserts that the Synchronphasor Project itself will drive the development of national smart grid standards. PG&E states that it has focused on minimizing stranded costs on a number of fronts, including its selection of product vendors, component testing for ease of integration, and implementing an open and modular architecture that is not vendor-specific.

D. Demonstration No. 4: Information Sharing with Department of Energy Smart Grid Clearinghouse

20. PG&E agrees to share all non-proprietary information developed for the purpose of the Synchronphasor Project with the Department of Energy Smart Grid Clearinghouse. PG&E states that it will report to the Department of Energy every calendar quarter on the progress, costs, and benefits of the Synchronphasor Project.²⁶

III. Notice of Filing and Responsive Pleadings

21. Notice of PG&E's filing was published in the *Federal Register*, 74 FR 47242 (2009), with interventions and protests due on or before October 5, 2009. Southern California Edison Company, San Diego Gas & Electric Company, Six Cities,²⁷ California Municipal Utilities Association, and Sacramento Municipal Utility District filed timely motions to intervene; the California ISO, Metropolitan Water District of Southern California (Metropolitan), WECC, Transmission Agency of Northern California (TANC), and Modesto Irrigation District (Modesto) filed motions to intervene and comments; Six Cities filed comments; the city of Santa Clara, California and the M-S-R Public Power Agency moved to intervene and adopt the comments of TANC; and California Department of Water Resources State Water Project (California SWP) moved to intervene and file comments, and moved for consolidation with Commission Docket No. ER09-1521-000. On October 7, 2009, the California Public Utilities Commission (California PUC) filed a motion for leave to intervene out of time and comments.

22. On October 9, 2009, PG&E moved for leave to file an answer to comments and answer to California SWP's motion for consolidation. On October 30, 2009, PG&E

²⁵ *Id.* at 17.

²⁶ *Id.* at 18-19.

²⁷ Six Cities is composed of the cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California.

moved to lodge the Department of Energy's notification of selection for smart grid investment grant.

IV. Discussion

A. Procedural Matters

23. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2009), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R § 385.214(d) (2009), the Commission will grant the California PUC's late-filed motion to intervene, given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2009), prohibits answers unless otherwise ordered by the decisional authority. We will accept PG&E's answer because it has provided information that assisted us in our decision-making process.

B. Comments

24. California ISO comments that it will derive the greatest benefit from phasor measurement units "when they are deployed across a diverse geographic range of key points in the transmission system" and that PG&E's current use of such units has thus far been "somewhat limited."²⁸ California ISO states, however, that the Synchrophasor Project will "prove invaluable" in providing it with a more complete view of system conditions. California ISO supports PG&E's participation in the regional synchrophasor project.²⁹

25. WECC supports PG&E's filing, commenting that the Synchrophasor Project is part of WECC's proposed Western Interconnection Synchrophasor Program, which should itself result in a safer and more reliable interconnection.³⁰ WECC states that the Western Interconnection Synchrophasor Program will improve wide-area views for system operators, use two region-wide control systems to aid in preventing system-wide

²⁸ California ISO Comments at 3.

²⁹ *Id.* The regional synchrophasor project conducted by WECC is distinguished from the Synchrophasor Project. PG&E's Synchrophasor Project is *part of* the regional synchrophasor project.

³⁰ WECC Comments at 3.

disturbances, and provide a collaboration base for other smart grid technologies in the Western Interconnection.³¹

26. Metropolitan comments that PG&E's filing creates confusion and contains inconsistencies that require PG&E's further explanation. Metropolitan comments specifically that PG&E's procedural decision to seek declaratory relief, rather than via FPA section 205, may avoid a careful scrutiny of PG&E's costs and "potentially, unjust and unreasonable rates."³²

27. Metropolitan comments that it is unclear whether PG&E will proceed with the Synchronphasor Project if the Department of Energy does not award it funding. Metropolitan remarks that moreover, PG&E's petition creates confusion with regard to its relationship with PG&E's TO-12 rate filing in Docket No. ER09-1521-000.³³ Metropolitan states that PG&E includes a capital cost for "synchronphasor technology demo" in TO-12, and Metropolitan states that confusion results from such inclusion in the rate case, when PG&E asserts that it will not seek recovery of any Synchronphasor Project costs until after the Synchronphasor Project is operational.³⁴ Metropolitan asks the Commission to order PG&E to follow "appropriate accounting and reporting requirements" related to PG&E's actual expenses for the Synchronphasor Project.³⁵ Metropolitan comments that "the Commission retains authority [under FPA section 205] to review PG&E's actual costs in the relevant TO rate cases that were incurred to deploy the Synchronphasor Project, regardless of any eventual decision on PG&E's Petition in this docket to authorize PG&E to recover Synchronphasor Project costs."³⁶

28. TANC files comments similar to Metropolitan's. TANC comments that PG&E's inclusion of a capital cost for "synchronphasor technology demo" in TO-12 creates confusion. TANC asks the Commission to order PG&E to follow "appropriate accounting and reporting requirements" relating to PG&E's actual expenses for the Synchronphasor Project.³⁷ TANC comments that a Commission order in this matter

³¹ *Id.* at 3-4.

³² Metropolitan Comments at 8.

³³ *Id.* at 9-10.

³⁴ *Id.* at 10.

³⁵ *Id.* at 11.

³⁶ *Id.* at 12.

³⁷ TANC Comments at 9-10.

awarding declaratory relief is not a blanket spending authorization and that such order should be limited to the \$25 million PG&E seeks.³⁸

29. Modesto comments that it seeks “to ensure that the eventual costs by PG&E in furtherance of the synchrophasor project are prudently incurred and properly reported and accounted,” and that Modesto is a member of TANC and joins in TANC’s comments.³⁹

30. Six Cities comments that to the extent that PG&E’s request for declaratory relief is granted, the Commission should clarify that affected parties will be permitted to review the level of Synchrophasor Project costs included in PG&E’s rates when PG&E makes a filing to recover such costs.⁴⁰ Six Cities also requests that the Commission reserve the right to address the allocation of high and low voltage costs at that time.⁴¹

31. California SWP comments that PG&E’s petition lacks sufficient detail regarding the justness and reasonableness of its \$25 million costs for the Synchrophasor Project, and lacks sufficient detail to show that recovery of 100 percent of stranded costs, in the case of the Synchrophasor Project’s abandonment, is essential to project funding.⁴² Fundamentally, comments California SWP, “PG&E’s [p]etition fails to address the long-standing statutory rate requirements that PG&E’s rates, with the costs of the [Synchrophasor] Project included, will be just and reasonable and that the facilities will be used and useful.”⁴³ California SWP states that PG&E’s petition does not state how the costs of high and low voltage facilities will be allocated.⁴⁴ Finally, California SWP states that PG&E’s requests in this docket are “inextricably intertwined with” TO-12 because of the inclusion of costs in TO-12 for “synchrophasor technology demo” and other costs of \$10 million that will be spent on the Synchrophasor Project in 2010.⁴⁵ Therefore, California SWP requests that the Commission consolidate this docket with the proceedings in TO-12.

³⁸ *Id.* at 9 and 12.

³⁹ Modesto Comments at 7.

⁴⁰ Six Cities Comments at 2.

⁴¹ *Id.* at 3.

⁴² California SWP Comments at 7.

⁴³ *Id.* at 11.

⁴⁴ *Id.* at 12.

⁴⁵ *Id.* at 13.

32. California PUC comments that while PG&E proposes to recover Synchrophasor Project costs not funded by a Department of Energy smart grid grant through Commission-jurisdictional, rather than California PUC-jurisdictional rates, the California PUC takes the opportunity to “examine whether this project would in fact meet the criteria that the [California PUC] set out in Decision D.09-09-029” because California PUC’s support for PG&E’s petition is contingent on PG&E’s satisfaction of these criteria.⁴⁶ California PUC’s support for PG&E’s petition is conditioned on PG&E’s being authorized to spend no more than \$25 million, PG&E’s provision of a detailed itemized budget for the Synchrophasor Project, PG&E’s demonstration that the costs set forth in such budget are necessary for the Synchrophasor Project, and PG&E’s attestation that ratepayer funding of the Synchrophasor Project “would in no way overlap with ratepayer funding for any other project that PG&E is carrying out for which it is currently seeking, or intends to seek, recovery through [California PUC] rates.”⁴⁷ California PUC asks the Commission to take these comments into account as we consider PG&E’s petition.

33. PG&E moves to lodge the Department of Energy’s October 27, 2009, notice to WECC (and PG&E as sub-awardee) that the Department of Energy has selected the Synchrophasor Project (as part of the Western Interconnection Synchrophasor Project) for award negotiations.

34. In its answer, PG&E states that while it intends to spend \$25 million over the period 2010 through 2012, it will not seek to include any of such costs in rates until the Synchrophasor Project becomes operational. PG&E answers the questions regarding confusion about the inclusion of part of such costs in the TO-12 rate case as follows, “[t]herefore, although the 2010 capital expenditures related to the Synchrophasor Project are discussed in PG&E’s TO-12 filing, they affect neither PG&E’s revenue requirement, nor rates, for 2010—the Test Year for PG&E’s TO-12 filing.”⁴⁸

35. PG&E addresses the concerns of several commenters about the opportunity to evaluate the justness and reasonableness of costs of the Synchrophasor Project by stating that such evaluation will be part of its future rate case, when the Synchrophasor Project becomes operational.⁴⁹

⁴⁶ California PUC Comments at 8.

⁴⁷ *Id.* at 8-9.

⁴⁸ PG&E Answer at 4.

⁴⁹ *Id.* at 5.

36. PG&E answers the California PUC's discussion of additional conditions in its process for smart grid projects by agreeing to discuss providing additional information to the California PUC informally.⁵⁰

37. Finally, PG&E opposes California SWP's motion to consolidate this proceeding with Docket No. ER09-1521-000 by explaining that since costs of the Synchronphasor Project will not be included in PG&E's 2010 revenue requirement, there are no common issues of law and fact between this proceeding and Docket No. ER09-1521-000.

C. Commission Determination

38. The Commission finds that PG&E's filing meets the demonstrations set forth in the Policy Statement. Accordingly, we grant its request for a declaratory order that it may recover in electric transmission rates the costs to develop the Synchronphasor Project and that it may seek recovery of 100 percent of abandoned plant costs in the event that the Synchronphasor Project is abandoned for reasons beyond PG&E's control.⁵¹

1. Four Smart Grid Policy Statement Demonstrations

39. Because we have a number of observations about PG&E's second demonstration—regarding cybersecurity—we will address it last. As to the first demonstration, PG&E's statement that the Synchronphasor Project will provide real-time data on several key operating measurements enabling operators to identify system problems earlier and allowing timely actions to avoid widespread system disturbances is consistent with the policy and goals set forth in EISA § 1301. PG&E's further discussion of future smart grid applications that will leverage synchronphasor-provided data to support reliability, security and efficiency, including separation of the power system into islands to confine disturbances, also supports the goals of EISA § 1301.

40. Regarding the third demonstration, PG&E's participation and collaboration with WECC and NIST in developing and applying this smart grid technology shows its commitment to minimize the risk of stranded investment in the technology used in the Synchronphasor Project. Furthermore, we agree with PG&E that the Synchronphasor Project could itself be a driver in the development of national smart grid standards, since it is an early smart grid project and will be implemented as part of an interconnection-wide effort led by WECC and partially funded by the Department of Energy for that very purpose. PG&E's statement that it has focused on minimizing stranded costs by its selection of product vendors, component testing for ease of integration, and

⁵⁰ *Id.*

⁵¹ Policy Statement, 128 FERC ¶ 61,060 at P 122.

implementing an open and modular architecture that is not vendor-specific indicates that PG&E has closely considered our concern that a company's implementation of smart grid technology should minimize the risk of stranded costs prior to the existence of relevant Commission-approved interoperability standards.⁵²

41. Regarding the fourth demonstration, we are persuaded by PG&E's assertion that it is committed and will continue to share information with the Department of Energy Smart Grid Clearinghouse.⁵³

42. Finally, regarding the second demonstration that PG&E's smart grid project does not adversely affect the reliability or cybersecurity of the bulk power system, we find that PG&E has met this burden based on a number of factors. First, PG&E commits that "[t]he Synchronphasor Project will be developed, installed, and maintained in accordance with Commission-approved reliability standards."⁵⁴ Second, we understand that PG&E's proposed initial use of the synchronphasor data is for after-the-fact analysis. Third, PG&E's Synchronphasor Project is part of the necessary process to learn how to reliably and securely make use of synchronphasor data and communications to improve the reliability, security, and efficiency of the electric grid, as envisioned by EISA §1301(1). Fourth, because we are mindful that, in the future, the smart grid will almost certainly make direct operational use of synchronphasor data, we base our finding on PG&E's commitment to designate the substations where the phasor measurement units and the phasor data concentrators are located as critical assets under CIP 002.⁵⁵ We emphasize that this finding is specific to the facts and circumstances of PG&E's petition, and that future applications will be assessed based on then-existing conditions. Because this is the Commission's first opportunity to address an application pursuant to its interim smart

⁵² PG&E Petition at 17-18.

⁵³ Policy Statement, 128 FERC ¶ 61,060 at 18-19.

⁵⁴ PG&E Petition at 14.

⁵⁵ *Id.* at 16. While PG&E indicates that the phasor measurement units and phasor data concentrators will be installed at locations that will be designated as critical assets, it does not specifically state that the synchronphasors themselves will be classified as critical cyber assets. PG&E states that it "intends to expand its list of assets identified as Critical Cyber Assets under the NERC CIP 002 to meet the Synchronphasor Project requirements," but it does not explain whether all of its phasor measurement units and phasor data concentrators will be so designated. (*Id.*) We commend PG&E for its acknowledgement that these locations are critical assets and expect that this determination will be the basis for the future identification of appropriate critical cyber assets at such locations.

grid rate recovery policy, however, we take the opportunity to make a few observations about our analysis of this issue.

43. This petition involves synchrophasors, which are a component of a smart grid but also can be, and have been, deployed independently from any other smart grid components. The use of synchrophasors has in fact been studied extensively for a number of years. At a meeting held by the North American Synchrophasor Initiative (NASPI) on February 5, 2009, a representative of NERC made a presentation titled *Primer Discussion on Cyber Security: What do the CIP Standards Mean for SynchroPhasors in the Future?*, which is available on the NASPI website.⁵⁶ That presentation noted that synchrophasors “represent an important advance and need to be promoted and deployed in a smart manner.”⁵⁷ It also noted that “[m]ost SynchroPhasor applications are not critical to the operation of the Bulk Electric System *today*” but could become critical in the future as new applications develop and mature.⁵⁸

44. We agree with NERC’s assessment of the current state of synchrophasor uses. Our current understanding is that synchrophasor data today is mostly used for after-the-fact analysis and seldom if ever feeds directly into operational decisions. However, as NERC’s presentation highlights, and as PG&E’s own application here seems to presage as well, future smart grid applications will almost certainly make direct operational use of synchrophasor data. At that point, such issues as the authentication of synchrophasor data communications will become important. The possibility of corrupted synchrophasor data and/or communications adversely affecting operational decisions and/or systems, including automated responses, will have to be fully addressed if the reliability and cybersecurity of the bulk power system are to be protected.⁵⁹ As the Commission stated

⁵⁶ See

http://www.naspi.org/meetings/workgroup/2009_february/presentations/nerc_cyber_security_mix_20090205.pdf. Although the NERC presentation is not part of the record in this case, we will take judicial notice of it.

⁵⁷ *Id.* Slide 4.

⁵⁸ *Id.* Emphasis added.

⁵⁹ For example, PG&E states that it will authenticate synchrophasor communications (determine whether the communication is with an authorized device or person) by using publish and subscribe controls, but these types of controls typically do not provide a strong method of authentication. Publish and subscribe controls can consist of a distribution list, with an authorized sender of data transmitting the data to multiple authorized receivers, and sometimes to other devices that are not “authorized” receivers, which are to ignore the data. However, in broadcast networks (IP based) unauthorized receivers can eavesdrop and acquire data. Therefore, publish and subscribe is typically

(continued...)

in Order No. 706, if a critical asset is configured such that it cannot operate and support the reliability and operability of the bulk-power system without a real-time stream of data, that data fits the definition of a critical cyber asset which should be protected under the CIP standards.⁶⁰

45. The current deployment of synchrophasors can be viewed as part of the necessary process to learn how to reliably and securely make use of synchrophasor data and communications to improve the reliability, security, and efficiency of the electric grid, as envisioned by EISA §1301(1). We emphasize that this finding as to PG&E's petition is only with regard to the synchrophasors and their current role in after-the-fact analysis. Future "real-time" applications of synchrophasor data and communications will require their own detailed demonstration of no adverse reliability and cybersecurity impact.

46. Finally, we note that it is important for entities to designate the substations where phasor measurement units and the phasor data concentrators are located as critical assets under CIP 002. In addition, if the phasor measurement units and phasor data concentrators will feed directly into operational decisions, then such devices should also be identified and protected as critical cyber assets.

47. Under Order No. 706, entities are responsible in the first instance to designate their critical assets and associated critical cyber assets. In a letter to industry stakeholders dated April 7, 2009, NERC expressed concern about the industry's response to NERC's critical asset self-certification survey given the relatively low levels of assets designated as critical. In Order No. 706, we found that the self-certification and audit processes are not sufficient to provide a responsible entity timely feedback regarding its critical asset determinations.⁶¹ Rather, we required NERC to develop a process of external review and

not considered a security mechanism but rather is a distribution mechanism. Although PG&E also states that it will maintain the integrity of the data communications (determine whether the data is correct) with the use of a secure redundant network, it does not describe how it will accomplish this. To the extent that PG&E's future smart grid applications make direct operational use of synchrophasor data, addressing such concerns will become important.

⁶⁰ *Mandatory Reliability Standards for Critical Infrastructure Protection*, Order No. 706, 122 FERC ¶ 61,040, at P 271 (2008), *order on reh'g*, Order No. 706-A, 123 FERC ¶ 61,174 (2008), *order on clarification*, Order No. 706-B, 126 FERC ¶ 61,229 (2009); *Order on Clarification*, Order No. 706-C, 127 FERC ¶ 61,273 (2009) .

⁶¹ Order No. 706, 122 FERC ¶ 61,040 at P 324.

approval of critical asset lists.⁶² That process has not yet been developed.⁶³ Under these circumstances, as larger numbers of smart grid facilities are developed and added to the grid, the feasibility of continuing to rely on self-designations of critical assets and critical cyber assets becomes more tenuous and the urgency of the necessary modifications to the CIP standards becomes more acute. While the Commission would prefer to permit NERC to complete the necessary modifications on the timeline it deems appropriate, it may be necessary to compel quicker action if the cybersecurity of the bulk-power system is not adequately addressed.

2. Rate Recovery and Other Issues

48. With respect to intervenors' comments regarding rate recovery, the parties have a common concern—whether they and the Commission will have ample opportunity to examine the specific costs associated with the Synchronphasor Project in an FPA section 205 proceeding. Six Cities and TANC express this concern, in part, as a function of the Commission's provision, in the Policy Statement, of a choice for smart grid applicants to seek declaratory relief and later file a rate case under FPA section 205, or to proceed directly under FPA section 205. Metropolitan, TANC, and California SWP express this concern as confusion between this proceeding and PG&E's current rate case, TO-12, which makes at least two mentions of smart grid costs. Six Cities and California SWP also ask the Commission to make clear that the parties will have the opportunity to review any allocation PG&E eventually makes between high and low voltage facility costs of the Synchronphasor Project.

49. The Commission believes that the commenters' desire to make certain that they and other parties, as well as the Commission, will have the usual ability to review the justness and reasonableness of the Synchronphasor Project's costs in an FPA section 205 rate case merits highlighting. In the Policy Statement, the Commission did not intend to imply that by choosing the declaratory order process, a smart grid applicant for interim rate treatment could avoid the showings that any other Commission-jurisdictional entity seeking rate recovery must make under the FPA. Accordingly, we clarify that the parties will be able to review and comment on the level of costs included in PG&E's rates and the allocation of those costs at the time that PG&E makes a filing to recover them.

50. We will grant PG&E's motion to lodge the Department of Energy's Notification of Selection for Smart Grid Investment Grant. Since PG&E's petition seeks the Commission's declaration that "in the event that DOE approves the grant application"

⁶² *Id.* P 329.

⁶³ See *North American Electric Reliability Corporation*, 128 FERC ¶ 61,291, at Attachment entitled *Compliance Issues on Implementation Plan* (2009).

PG&E will be able to recover half of PG&E's portion of the regional synchrophasor project,⁶⁴ the Commission believes the notification of selection is relevant to this proceeding and we will include it in the record in this case.

51. The Commission will deny California SWP's motion to consolidate this proceeding with Docket No. ER09-1521-000. We agree with PG&E that its petition in this case does not share sufficient common issues of law and fact to merit consolidation with the proceedings in its 2010 transmission rate case, because, in part, the proceedings in Docket No. ER09-1521-000 involve different test years. Furthermore, PG&E has affirmed that it will not seek to include any costs of the Synchrophasor Project in transmission rates until it becomes operational, and that interested parties will have the opportunity to evaluate the justness and reasonableness of the costs of the Synchrophasor Project in its future rate case.⁶⁵ Accordingly, we find it unnecessary to consolidate these proceedings.

The Commission orders:

(A) PG&E's petition for a declaratory order is hereby granted, as discussed in the body of this order.

(B) PG&E's motion to lodge the Department of Energy's Notification of Selection for Smart Grid Investment Grant is hereby granted.

(C) California SWP's motion to consolidate this proceeding with Docket No. ER09-1521-000 is hereby denied.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

⁶⁴ PG&E Petition at 3.

⁶⁵ PG&E Answer at 4-5.