BES Cyber Asset Survey
All Comments
Comments of

EEI, NRECA, APPA
Comments of the American Public Power Association, the Edison Electric Institute, and the National Rural Electric Cooperative Association

On behalf of our respective members, the American Public Power Association (“APPA”), the Edison Electric Institute (“EEI”), and the National Rural Electric Cooperative Association (“NRECA”) (collectively the “trade associations”) are pleased to submit these comments on the proposed Survey Regarding the Scope of the Term BES Cyber Asset, dated May 30, 2014, in response to specific directives of the Federal Energy Regulatory Commission (“FERC” or “Commission”).

APPA is the national service organization representing the interests of not-for-profit, publicly owned electric utilities throughout the United States. More than 2,000 public power utilities provide over 15 percent of all kilowatt-hour sales of electricity to ultimate customers. 328 public power utilities are now included on the NERC compliance registry.

EEI is the association of the nation’s shareholder owned electric utilities, international affiliates, and industry associates world-wide. The members of EEI are required to comply with the North American Electric Reliability Corporation’s (“NERC”) mandatory reliability standards, including the CIP version 5 standards.

NRECA is the national trade association for 930 rural electric cooperatives, including approximately 60 generation and transmission cooperatives and 100 distribution cooperatives that are required to comply with NERC’s reliability and cyber security standards.

The Survey Regarding the Scope of the Term BES Cyber Asset (“proposed survey”) is the mechanism NERC proposes to use to collect the information directed by the Commission. Specifically, NERC proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk electric system to submit data to “satisfy the Commission’s directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.”

The proposed survey should not be submitted to the NERC Board of Trustees in its current form due to a number of concerns. Part 1 of these comments describes these concerns with the proposed survey and Part 2 describes an alternative approach to address the Commission’s directive. We encourage NERC to adopt the alternative approach, which will not only significantly reduce the burden to responsible entities and NERC itself, but will also provide a more useful tool to help the Commission, Registered Entities, and Regional Entities better understand the CIP version 5 BES Cyber Asset definition.

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Part 1: Proposed Survey Concerns – Key concerns with the proposed survey include (1) the proposed survey is not needed to respond to the Commission’s directive, (2) the survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden to entities, and (3) the survey itself is unclear, which will increase the burden and make it difficult for NERC to respond to the Commission.

1. NERC’s proposed survey is not needed to respond to the Commission’s Order No. 791 directive

The proposed survey requires entities to inventory all of their cyber assets, which is not needed for NERC to respond to the Commission’s Order 791 directive. Order No. 791 does not direct NERC to conduct an inventory-type survey or to use NERC Rules of Procedure Section 1600, which, once approved by the NERC Board of Trustees, makes the survey mandatory for all owners, operators, and users of the bulk electric system registered on the NERC Compliance Registry.

In fact, the Commission clarified in Order No. 791-A that Order No. 791 does “not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter.” Therefore, an inventory-type survey is not necessary for NERC to meet its Order 791 obligations because the Commission did not direct NERC to conduct such a survey. Also, Order No. 791-A suggests by example that NERC could use the pilot program participants “as the basis for the survey.” This example further supports the conclusion that the Commission did not direct NERC to conduct an inventory-type survey of all Registered Entities.

Nevertheless, the proposed survey is an inventory-type survey that requires entities to count all cyber assets, both in scope and out of scope of the BES Cyber Asset definition at applicable assets (i.e., control centers, transmission stations or substations, and generation plants). To complete the survey, entities must count all of their cyber assets, apply the BES Cyber Asset definition to each cyber asset, apply the CIP-002-5.1 Attachment 1 impact rating criteria, and identify the type of assets at each location (using the cyber asset types defined in the survey). A survey that requires these steps is an inventory-type survey. The Commission explicitly said in Order 791-A that an inventory-type survey was not directed and therefore it is not needed for NERC to meet its obligations under Section 215 of the Federal Power Act.

Also, in Order No. 791, the Commission stated that it “directs NERC to conduct a survey of Cyber Assets that are included or excluded under the new BES Cyber Asset definition.” The Commission does not direct NERC to conduct a survey that counts assets that are included and excluded under the BES Cyber Asset definition, which is what the proposed survey requires.

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3 “Owners, operators, and users of the bulk power system registered on the NERC Compliance Registry shall comply with authorized requests for data and information... NERC may request the Commission to exercise its enforcement authority to require the reporting entity to comply with the request for data or information and for other appropriate enforcement action by the Commission.” NERC Rules of Procedure § 1603. A request for data and information is authorized upon approval by the NERC Board of Trustees. Id. at § 1602.

4 In support of the proposed survey, NERC also cites Section 39.2(d) of the Commission’s regulations, which requires “each user, owner or operator of the Bulk-Power System” to provide information that “is necessary to implement section 215 of the Federal Power Act as determined by the Commission.” 18 C.F.R. § 39.2(d).

5 Order No. 791-A at P 21 (2014).

6 Not just “Cyber Assets impacted by the 15-minute parameter.” Id.

7 Order No. 791, 145 FERC ¶ 61,160 at PP 124 (emphasis added).
In a Frequently Asked Questions (FAQ) document posted by NERC on July 8, 2014\(^8\), NERC stated that they need “the level of detail requested in the survey in order to provide meaningful analysis as part of its information filing to FERC.” However, the Commission does not require NERC to analyze and explain how all Registered Entities are evaluating their myriad of cyber assets to identify BES Cyber Assets. As stated above, the Commission clarified that an inventory-type survey is not needed and suggested that NERC use the pilot program participants as the basis for the survey, therefore such detail is not needed by NERC.

2. The proposed survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden on entities rather than help them implement CIP version 5 as the Commission intended in Order No. 791

The proposed survey requires early enforcement of CIP-002-5.1. As mentioned above, the use of NERC Rules of Procedure Section 1600 makes responding to a data or information request mandatory for all owners, operators, and users of the bulk electric system. Counting all cyber assets—in and out of scope of the Cyber Asset definition—effectively requires entities to apply CIP-002-5.1 within 70 days of issuance of the survey, which is expected in August upon approval by the NERC Board of Trustees. The 70 day time period is also insufficient as the proposed survey does not ask entities to provide estimates of the number of cyber assets at control centers, transmission stations or substations, and generation plants but to provide actual counts and identify the counts by NERC-defined cyber asset type. Also “NERC staff will further validate the data provided,” which suggests that this survey could be used by NERC, wittingly or unwittingly, for enforcement purposes even though CIP-002-5.1 is not enforceable until April 1, 2016 and the requirements for low impact Cyber Assets or Systems are not enforceable until April 1, 2017.

NERC clarified in the FAQ\(^9\) document that “entities do not need an inventory or list of low impact BES Cyber Systems or their BES Cyber Assets, but NERC requests that entities provide an indication of the type and general number range of assets they know are at the facilities.” However, this estimation-type language is not in the survey. The language of the survey is what will become mandatory under Section 1600.

The steps required to complete the proposed survey and the fact that the survey would be mandatory under Section 1600 imposes a new obligation for all owners, operators, and users of the bulk electric system. Counting all low impact cyber assets that meet and do not meet the BES Cyber Asset definition is a particular concern as CIP 003 Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Counting low impact cyber assets is not required by CIP version 5, but is required by NERC’s proposed survey. The proposed survey also defines the types of cyber assets to count, which is new and specific to the proposed survey and a part of CIP version 5.

The survey forces entities to apply the BES Cyber Asset definition to each cyber asset associated with “low impact” control centers, transmission stations or substations, and generation plants. However, CIP-002-5.1 Requirement 1.3 only requires that entities “identify each asset that contains a low impact BES


\(^9\) Id.
Cyber System according to Attachment 1, Section 3.” The standard also specifically states that “a discrete list of low impact BES Cyber Systems is not required.” To comply with the standard, an entity must identify all of their assets (e.g., control centers, substations, generation plants) that meet the asset description in CIP-002-5.1, R1 (“R1 assets”) and then apply the Attachment 1 Medium and High Impact criteria to these assets to identify and inventory all associated high and medium impact BES Cyber Systems. For R1 assets that do not contain any High or Medium Impact BES Cyber Systems (“low impact assets”), entities can choose to apply the BES Cyber Asset definition to cyber assets at these assets or conservatively assume that the asset contains a low impact BES Cyber System. An entity is not required by CIP-002-5.1 to identify and assess every cyber asset associated with a low impact asset. However, the proposed survey would require entities to identify, assess, and inventory all of the cyber assets at low impact cyber assets, which imposes a new burden on entities that is not also required by the standard.

The burden imposed by the proposed survey is significant. NERC estimates that the counting and subsequent categorization by the NERC-provided cyber asset types included in the proposed survey will require the expenditure of, over $8 million, in a condensed period of time (70 days). But, this $8 million estimate is based on NERC’s estimate of 40 – 100 hours per entity. Registered Entities estimate higher costs to complete the proposed survey. These costs for a survey to help the Commission better understand the BES Cyber Asset definition is unreasonable and unduly burdensome.

The scope and burden of the proposed survey will also not help “other entities implementing CIP version 5 in identifying BES Cyber Assets” as the Commission intended. Instead, the proposed survey will harm entities by requiring them to pull resources devoted to implementing CIP version 5 to complete the proposed survey. After NERC submits the informational filing to the Commission, entities will have already invested resources on identifying BES Cyber Assets, which they may have to change based on the information filing NERC submits to the Commission. Requiring all Registered Entities to respond to the survey increases the burden to bulk electric system owners, operators, and users without a commensurate benefit to reliability.

3. The proposed survey is unclear, which will increase the burden for entities to respond to the survey and make it difficult for NERC to accurately respond to the Commission in an informational filing.

NERC’s issuance of a FAQ document on the proposed survey is a good indication that the survey is unclear. The proposed survey is also flawed because the tables assume that control centers, transmission stations or substations, and generation plants will be identified as low, medium, high impact. However, these assets may actually have a mix of cyber assets and systems at different impact ratings. The survey tables require impact rating categorization at the control center, transmission station or substation, and generating plant level; however, CIP-002-5.1 Attachment 1 is focused on categorization at the BES Cyber System level.

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10 CIP-002-5.1 Requirement R1 Part 1.3
11 Assuming an average of 75 hours per entity to complete the survey (using NERC’s estimate), 1475 Registered Entities, and $72/hour (based on FERC’s estimates in Order No. 791 P 240): 75 hours/entity * 1475 entities * $72/hour = $8 million
12 NERC has estimated between 40 and 100 hours, depending upon the size of the entity.
13 For example, EEI members estimate over ten times the NERC estimate to complete the proposed survey, which could escalate costs to the industry to more than $80 million.
For example, under CIP-002-5.1 Attachment 1 Section 2.1, consider a generation plant that has two generating units each with an 800 MW net Real Power capability over the preceding 12 months. The generation plant itself is not considered medium impact. Rather, it is only a candidate for having medium and/or low impact BES Cyber Systems since the plant has a 1600 MW Real Power capability over the previous 12 months. To properly classify the BES Cyber Systems, cyber assets for the site need to be evaluated to determine if it impacts the entire 1600 MW output from the plant or only 800 MW from a single unit within 15 minutes. The classification depends on the way the control systems and protection systems are installed. BES Cyber Systems that impact the entire 1600 MW output would be considered medium impact. BES Cyber Systems that only impact 800 MW would be considered low impact.

The proposed survey refers to locations of operating elements under the control center section, but does not define what a separate location means. For example, are operating elements in the same location if they are in the same room, building, or street address?

The survey should also be limited to Cyber Assets that are associated with the bulk electric system and subject to the CIP Standards. The proposed survey requires counting cyber assets that meet and do not meet the BES Cyber Asset definition; it is unclear whether every programmable electronic device (e.g., every corporate printer or programmable telephone) should be counted to complete the survey. Also, some assets or systems (e.g., nuclear plants and registered distribution providers) are exempt from the standards. It is unclear whether this survey applies to these exempt systems and how Registered Entities with only exempt systems (e.g., nuclear generation plants) should complete the survey.

These ambiguities make it even more burdensome for entities to respond because the proposed survey requires entities to not only use CIP-002-5.1 and the NERC-prescribed Type of Cyber Asset, but also determine whether operating elements of a control center are at separate locations and whether certain cyber assets or systems should even be counted. This ambiguity will also make it difficult for NERC to interpret the survey results as each entity could interpret the request differently.

The proposed survey will also produce a large amount of count data and explanation information for NERC to analyze and validate. NERC will receive responses from over a thousand entities, which will yield thousands of tables containing cyber asset counts. NERC will have to sort through and analyze all of this data to glean relevant and meaningful facts that will provide responses to the Commission’s questions. The function descriptions that accompany these tables are likely to vary in detail and format, which will increase the burden on NERC to read and interpret these responses. We do not believe that NERC will be able to process the data in a useful or accurate fashion in the time frame required by the Commission to respond to Order No. 791.15

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15 In the proposed survey, NERC identified five staff members. Assuming NERC received 1475 responses, which take an average of 4 hours (per response) to analyze, and that NERC staff works 40 hours per week, it would take these five staff members 30 weeks just to analyze the responses. Assuming the proposed survey is issued on August 18, it will be due on October 27, which only leaves about 14 weeks for NERC to analyze and validate the responses and prepare the informational filing by February 3, 2015. NERC would need more than 10 full-time staff devoted to analyzing and validating the responses, aggregating them, and preparing the informational filing.
Part 2: Alternative Qualitative Approach – Use the pilot program participants to answer the Commission’s Order No. 791 questions, follow up with the program participants to validate their responses, and share with Registered Entities to gather additional feedback, including different approaches or concerns.

In Order No. 791-A, the Commission said:

We clarify that Order No. 791 did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter. Instead the scope of the survey was left for NERC to determine. Order No. 791 intended that NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 in the required NERC informational filing. For example, NERC could use the participants in the pilot program, discussed above, as the basis for the survey.\(^\text{16}\)

We agree with the Commission’s suggestion and strongly recommend that NERC start with the pilot participants to explain:

1. specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;
2. types of functions of Cyber Assets that meet the 15 minute parameter;
3. common problem areas with entities improperly designating BES Cyber Assets; and
4. feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.\(^\text{17}\)

The six volunteer responsible entities of the pilot program have already devoted resources “to work with NERC and the Regional Entities to implement the CIP version 5 standards in an accelerated timeframe.” From October 2013 through June 2014, the participants focused on the technical solutions and processes needed to meet version 5, which included facing “key issues, challenges, and potential resolutions relating to” implementing version 5.

Notably, the questions proffered by the Commission are qualitative (not quantitative) in nature. Once the pilot participants’ descriptive information is aggregated and summarized to maintain confidentiality, NERC or the regions could then conduct a qualitative survey to obtain specific feedback on the responses to these questions from a sample of other Registered Entities and the rest of the regions. A mandatory Section 1600 survey of all Registered Entities is not necessary to collect enough information to be informative to FERC’s directive. A qualitative survey targeted at obtaining feedback on answers to the Commission’s questions rather than the comprehensive data collection in the proposed survey will significantly reduce the burden on bulk electric system asset owners, operators, users, and NERC itself. This alternative approach would address the Commission’s directive in Order No. 791, reduce the

\(^{16}\) Order No. 791-A at P 21 (2014).
burden on all entities and NERC, and thereby allow all entities, including NERC, to more knowledgably focus on the actual implementation of CIP version 5.

The pilot program responses to the Commission’s questions from Order No. 791, compiled and summarized by NERC, will not only reduce the burden on entities, but will provide a useful resource to help them identify BES Cyber Assets as they implement CIP version 5. Focusing on the Commission’s questions will also improve the quality of the responses to NERC avoiding the confusion (see part 1.3 above) generated by the proposed survey. This approach also supports the Commission’s intent explicitly expressed in Order No. 791: “This filing should also help other entities implementing CIP version 5 in identifying BES Cyber Assets.”

Conclusion

In conclusion, we strongly encourage NERC to consider our proposed Alternative Qualitative Approach. We do not recommend submitting NERC’s posted proposed survey to the NERC Board of Trustees for approval. Rather than needlessly forcing all owners, operators, and users of the bulk electric system to engage in burdensome and expensive data collection exercises of questionable value, NERC should use the Commission’s scope as suggested in FERC Order No. 791-A as an opportunity to facilitate common understanding of the BES Cyber Asset definition and then use this information to report back to the Commission, as directed, regarding the efficacy of the 15-minute parameter and other aspects of the definition.

\[18 \text{Id.} \]
Comments of ATC
RE: Request for Public Comment on FERC Order No. 791 Survey

1. A description of the data or information to be requested, how the data or information will be used, and how the availability of the data or information is necessary for NERC to meet its obligations under applicable laws and agreements.
   a. A Description of the Data or Information Requested

   A description of the data or information to be requested is provided above. A link to a document showing the drop-down menus is provided on the web page where this request is posted.

   **Comments:** Regarding the content of the survey and the proposed description of the data or information that is to be requested, specifically as it relates to Low Impact, the current phrasing may be at variance with the intended directive of FERC Order No 791 as clarified in FERC Order No. 791-A and CIP Version 5 requirement language. Therefore, the proposed survey may not provide the clarity necessary forRegistered Entities to understand the obligation relative to scope and/or precision of the data being requested, and consequently could result in varied interpretation and inconsistency in Registered Entity response.

   In the survey’s current form, (using Part 1, Section II, bullets b-d as an example) Registered Entities could interpret the intent as an expectation to collectively perform and document the following actions to achieve success in completing this mandatory survey:

   1. Establish a comprehensive inventory of all Cyber Assets, including device-type and device-function level detail, at all Low Impact Transmission stations or substations.
   2. Perform and document an assessment of each inventoried Cyber Asset against the BES Cyber Asset definition inclusive of the determination of each Cyber Asset’s applicability to the BES Cyber Asset definition.
   3. Determine a precise count by device-type, inclusive of Cyber Asset function for each Low Impact Transmission stations or substation.
   4. Split the results by BES Cyber Assets and Cyber Assets excluded by the BES Cyber Asset definition, retaining device-type level detail and provide a precise count that fits into the identified ranges within each of two tables to separately represent aggregated device-level counts of BES Cyber Assets and Cyber Assets excluded by the BES Cyber Asset definition.
   5. Provide rationale for the assessment method used to determine Cyber Assets excluded by the BES Cyber Asset definition.

   **Option A** - Is it the intent that applicable Registered Entities inventory and assess Cyber Assets and Systems at Low Impact BES assets for applicability to the BES Cyber Asset definition, compile data to provide a precise count that fits into the identified ranges within each table for both BES Cyber Assets and Cyber Assets excluded by the BES Cyber Asset definition, and provide supporting rationale for the result?

   **OR**

   **Option B** - Is it the intent to obtain an approximation from each applicable Registered Entity, to the best of its ability, which represents a general count of BES Cyber Assets at Low Impact BES assets?
The approved future-enforceable version of CIP-002-5.1 Requirement R1.3 and CIP-003-5 Requirement R2 does not preclude Registered Entities from choosing to protect all Cyber Assets at Low Impact assets without the necessity to distinguish between BES Cyber Assets and Cyber Assets excluded by the BES Cyber Asset definition. ATC requests that Option B be taken into consideration to prevent the obligation of the survey from extending beyond the mandatory obligations of the approved future enforceable version of the standard.

To provide clarity and assure consistency and quality of the data being collected, ATC recommends that the survey content containing the inquiry for data or information, most specifically as it relates to Low Impact, be adjusted to align with the following excerpts:

- FERC Order No 791-A: Order No. 791 does “not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter.”¹
- CIP-002-5.1 Requirement R1.3: “(a discrete list of low impact BES Cyber Systems is not required).”
- CIP-003-5 Requirement R2: “...An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.”

One potential approach ATC offers for consideration to accomplish this could be, for example, in Part 1 Section II bullet b to adjust the phrasing as suggested below, and remove Part 1 Section II bullet c & d from the survey for Low Impact:

**Current phrasing:**
“For Low Impact Transmission stations or substations you own or operate, you do not have to use a separate table for each station or substation. Instead, please add up the number of Cyber Assets by device-type at all Low Impact stations or substations and mark an X under the range that includes the number of these Cyber Assets.”

**Potential alternative phrasing:**
“For Low Impact Transmission stations or substations you own or operate, you do not have to use a separate table for each station or substation. Instead, please provide an aggregated approximate number of BES Cyber Assets that are located at Low Impact stations or substations collectively, and mark an X under the range that includes the number of these BES Cyber Assets.”

b. How the data or information will be used

NERC will use the data to complete the informational filing that NERC must submit to the Commission by February 3, 2015. As noted above, in Order No. 791, the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards to determine the types of Cyber Assets that are included or excluded from the definition of BES Cyber Asset. NERC is required to submit an informational filing within one year of the effective date of Order No. 791 explaining, based on the survey data, the following: (1) specific ways in which entities determine which Cyber Assets meet the 15-minute parameter; (2) types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why; (3) common problem areas with entities improperly designating BES Cyber Assets.

¹ Order No. 791-A at P 21 (2014).
Cyber Assets; and (4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition. NERC will also use information learned from the Transition Study for the informational filing.

**Comments:** ATC does not have any comments or concerns regarding how the data or information that will be used.

c. How is the availability of the data or information necessary for NERC to meet its obligations under applicable laws and agreements
   As noted above, the proposed Data Request will provide NERC the data and information needed to comply with FERC’s directive in Order No. 791 to conduct a survey and submit an informational filing based on that survey.

**Comments:** ATC does not have any comments or concerns regarding why the availability data or information is necessary to meet NERC obligations.

2. A description of how the data or information will be collected and validated.
   NERC will identify the Registered Entities required to comply with the CIP Version 5 Reliability Standards and will prepare the survey, provide instruction to the identified registered entities for submitting the data, and collect and sort the data. NERC will compare the list of Registered Entities with the Data Request respondents to ensure that responses are received as requested. NERC staff will further validate the data provided.

**Comments:** ATC does not have any comments or concerns regarding how the data or information will be collected and validated.

3. A description of the entities that will be required to provide the data or information (“Reporting Entities”).
   All U.S. Balancing Authorities, Distribution Providers (as described in Applicability Section 4.1.2 of Reliability Standard CIP-003-5), Generator Operators, Generator Owners, Interchange Coordinators or Interchange Authorities, Reliability Coordinators, Transmission Operators, and Transmission Owners required to comply with the CIP Version 5 Reliability Standards must respond to the proposed Data Request.

**Comments:** ATC does not have any comments or concerns regarding the requirement to provide the data or information as a function of ATC’s Functional Registration.

4. The schedule or due date for the data or information.
   NERC proposes to require Reporting Entities to respond to the proposed Data Request within 70 days of its issuance.

**Comments:** ATC does not have any comments or concerns regarding the proposed response timeframe from the date of survey issuance for the data or information.

NERC expects to present the proposed Data Request for NERC Board of Trustees approval at the meeting of the Board of Trustees on August 13-14, 2014. Upon NERC Board of Trustees approval, the proposed Data Request will be issued and become mandatory.
ATC Comments on BES Cyber Asset Survey

Comments: ATC does not have any comments or concerns regarding the expected schedule for survey presentation and approval and subsequent proposed issuance timeframe.

5. A description of any restrictions on disseminating the data or information (e.g., “confidential,” “critical energy infrastructure information,” “aggregating” or “identity masking”). NERC’s treatment of confidential information is governed by Section 1500 of the ROP. Although the proposed Data Request does not require the disclosure of confidential or critical energy infrastructure information, any confidential information obtained will be protected in accordance with Section 1500. Further, none of the individual responses to the proposed Data Requests will be publicly posted or shared. In the informational filing with the Commission, NERC will only present aggregated data.

Comments: ATC does not have any comments or concerns regarding the sensitivity of the data or information being requested or the protective measures of Section 1500. ATC agrees with and supports the approach to assure that none of the individual responses will be publicly posted or shared.

6. An estimate of the relative burden imposed on the reporting entities to accommodate the data or information request:

The proposed Data Request is a one-time request for information with respect to an issue that applicable entities will already be reviewing as part of their transition to compliance with the CIP Version 5 Reliability Standards. The incremental burden for this one-time data collection will be the effort required to complete the survey based on the information learned during their transition activities. For small entities, the burden would expected to be minimal, approximately 40 hours total per entity to complete the Data Request, whereas for larger entities, the estimated time to complete the Data Request is estimated at less than 100 hours total per entity.

Comments: ATC does not have any comments or concerns regarding the estimated burden to accommodate the collection of the data or information being requested.

In addition to any overall comments on the proposed Data Request, address the following:

1) Please describe any additional equipment types that should be included in the tables in Part 1 of the Data Request.

Comments: ATC does not have any additional equipment types to propose for inclusion in the tables in Part 1 of the Data Request.

2) Are the ranges for numbers of Cyber Assets provided in the tables in Part 1 of the Data Requests appropriate to capture useable data from the survey?

Comments: ATC supports the ranges of numbers of Cyber Assets provided in the tables in Part 1 of the Data Request.
Comments of BEPC
Date: July 14, 2014

Subject: Request for Public Comment on FERC Order No. 791 Survey

Basin Electric Power Cooperative (BEPC) is a NERC registered entity in two regions, NCR00102 in MRO and NCR05023 in WECC, and anticipates responding to the FERC Order No. 791 Survey (aka. Survey Regarding the Scope of the Term BES Cyber Asset). BEPC has significant concerns about the time and resources it will take to complete the survey as drafted. We appreciate NERC taking into consideration BEPC’s comments and recommendations.

The survey appears to extend beyond the items identified within the FERC Order No. 791 paragraph 124. NERC should focus on what is specifically called out in paragraph 124. To go beyond at this time would divert resources away from efforts aimed at protecting High and Medium Impact assets.

As proposed, the survey would be part of a Section 1600 Data Request thereby making it mandatory that each Registered Entity submit data. Alternatively, NERC should consider statistically sampling registered entities or perhaps work with those who participated in the CIP Version 5 pilot programs.

BEPC recommends removing Low Impact BES Cyber Assets and Low Impact facilities from the survey. The CIP-002-5.1 standard does not require a discrete list of Low assets; however, to be effective the proposed survey would require an inventory be conducted. This would be burdensome to BEPC and especially difficult for the generation facilities which are in all likelihood going to be categorized as low impact.

The timing of the survey may impact BEPC’s ability to fully respond to CIP Version 5 Standards. Neither the CIP-002-5.1 BES Cyber System Categorization effort nor the implementation of the associated security management controls for the BES Cyber Systems are completed. NERC should consider delaying a survey of this magnitude until 2016.

Specific to the two questions asked in the May 20, 2014 letter from Valerie Agnew, Director of Standards, BEPC offers the following:

1) Please describe any additional equipment types that should be included in the tables in Part 1 of the Data Request. As proposed, the data request is overly broad in the identification of devices and may require additional resources on the corporate non-operational networks to accurately respond to the data request. NERC should consider focusing the survey on BES Cyber Systems or operations focused devices. No additional equipment types were identified to be included.

2) Are the ranges for numbers of Cyber Assets provided in the tables in Part 1 of the Data Requests appropriate to capture useable data from the survey? BEPC has not completed its CIP-002-5.1 BES Cyber System Categorization effort. It would be premature to speculate if the ranges are appropriate. Compounding errors may occur if estimates are used in arbitrary ranges. Conclusions based on such would be suspect.
In summary, the overly broad survey should be modified to lessen the impact to registered entities at this time. It would be prudent to not divert resources away from efforts aimed at protecting High and Medium Impact assets. Without completing the CIP-002-5.1 BES Cyber System Categorization effort, it would be difficult to fully and accurately respond to the survey as drafted.

Respectfully,

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Comments of

EEI
Request for Public Comment on Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”

Comments of the Edison Electric Institute

On behalf of our members, the Edison Electric Institute (“EEI”) is pleased to submit these comments on the proposed Survey Regarding the Scope of the Term BES Cyber Asset, dated May 30, 2014, in response to specific directives of the Federal Energy Regulatory Commission (“FERC” or “Commission”). EEI is the association of the nation’s shareholder owned electric utilities, international affiliates, and industry associates world-wide. The members of EEI are required to comply with the North American Electric Reliability Corporation’s (“NERC”) mandatory reliability standards, including the CIP version 5 standards.

The Survey Regarding the Scope of the Term BES Cyber Asset (“proposed survey”) is the mechanism NERC proposes to use to collect the information directed by the Commission. Specifically, NERC proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk power system to submit data to “satisfy the Commission’s directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.”

The proposed survey should not be submitted to the NERC Board of Trustees in its current form due to a number of concerns. Part 1 of these comments describes these concerns with the proposed survey and Part 2 describes an alternative approach to address the Commission’s directive. We encourage NERC to adopt the alternative approach, which will not only significantly reduce the burden to responsible entities and NERC itself, but will also provide a more useful tool to help the Commission, registered entities, and regional entities better understand the CIP version 5 BES Cyber Asset definition.

Part 1: Proposed Survey Concerns – Key concerns with the proposed survey include (1) the proposed survey is not needed to respond to the Commission’s directive, (2) the survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden to entities, and (3) the survey itself is unclear, which will increase the burden and make it difficult for NERC to respond to the Commission

1. NERC’s proposed survey is not needed to respond to the Commission’s Order No. 791 directive

The proposed survey requires entities to inventory all of their cyber assets, which is not needed for NERC to respond to the Commission’s Order 791 directive. Order No. 791 does not direct NERC to conduct an inventory-type survey or to use NERC Rules of Procedure Section 1600, which, once approved by the NERC Board of Trustees, makes the survey mandatory for all owners, operators, and users of the bulk power system registered on the NERC Compliance Registry.

3 “Owners, operators, and users of the bulk power system registered on the NERC Compliance Registry shall comply with authorized requests for data and information. . . NERC may request the Commission to exercise its
In fact, the Commission clarified in Order No. 791-A that Order No. 791 does “not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter.” Therefore an inventory-type survey is not necessary for NERC to meet its Order 791 obligations because the Commission did not direct FERC to conduct such a survey. Also, Order No. 791-A suggests by example that NERC could use the pilot program participants “as the basis for the survey.” This example further supports that the Commission did not direct NERC to conduct an inventory-type survey of all registered entities.

Nevertheless, the proposed survey is an inventory-type survey that requires entities to count all cyber assets, both in scope and out of scope of the BES Cyber Asset definition at control centers, transmission stations or substations, and generation plants. To complete the survey, entities must count all of their cyber assets, apply the BES Cyber Asset definition to each cyber asset, apply the CIP-002-5.1 Attachment 1 impact rating criteria, and identify the type of assets at each location (using the cyber asset types defined in the survey). A survey that requires these steps is an inventory-type survey. The Commission explicitly said in Order 791-A that an inventory-type survey was not directed and therefore it is not needed for NERC to meet its obligations under Section 215 of the Federal Power Act.

Also, in Order No. 791, the Commission stated that it “directs NERC to conduct a survey of Cyber Assets that are included or excluded under the new BES Cyber Asset definition.” The Commission does not direct NERC to conduct a survey that counts assets that are included and excluded under the BES Cyber Asset definition, which is what the proposed survey requires.

In a Frequently Asked Questions (FAQ) document posted by NERC on July 8, 2014, NERC stated that they need “the level of detail requested in the survey in order to provide meaningful analysis as part of its information filing to FERC.” However, the Commission does not require NERC to provide an explanation based on an analysis of all registered entities in its informational filing. As stated above, the Commission clarified that an inventory-type survey is not needed and suggested that NERC use the pilot program participants as the basis for the survey, therefore such detail is not needed by NERC.

2. The proposed survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden on entities rather than help them implement CIP version 5 as the Commission intended in Order No. 791

The proposed survey requires early enforcement of CIP-002-5.1. As mentioned above, the use of NERC Rules of Procedure Section 1600 makes responding to a data or information request mandatory for all enforcement authority to require the reporting entity to comply with the request for data or information and for other appropriate enforcement action by the Commission.” NERC Rules of Procedure § 1603. A request for data and information is authorized upon approval by the NERC Board of Trustees. Id. at § 1602.

4 In support of the proposed survey, NERC also cites Section 39.2(d) of the Commission’s regulations, which requires “each owner, operator or owner of the Bulk-Power System” to provide information that “is necessary to implement section 215 of the Federal Power Act as determined by the Commission.” 18 C.F.R. § 39.2(d).
5 Order No. 791-A at P 21 (2014).
6 Not just “Cyber Assets impacted by the 15-minute parameter.” Id.
7 Order No. 791, 145 FERC ¶ 61,160 at PP 124 (emphasis added).
owners, operators, and users of the bulk power system. Counting all cyber assets—in and out of scope of the Cyber Asset definition—effectively requires entities to apply CIP-002-5.1 within 70 days of issuance of the survey, which is expected in August upon approval by the NERC Board of Trustees. The 70 day time period is also insufficient as the proposed survey does not ask entities to provide estimates of the number of cyber assets at control centers, transmission stations or substations, and generation plants but to provide actual counts and identify the counts by NERC-defined cyber asset type. Also “NERC staff will further validate the data provided,” which suggests that this survey could be used by NERC, wittingly or unwittingly, for enforcement purposes even though CIP-002-5.1 is not enforceable until April 1, 2016 and the requirements for low impact Cyber Assets or Systems are not enforceable until April 1, 2017.

NERC clarified in the FAQ9 document that “entities do not need an inventory or list of low impact BES Cyber Systems or their BES Cyber Assets, but NERC requests that entities provide an indication of the type and general number range of assets they know are at the facilities.” However, this estimation-type language is not in the survey. The language of the survey is what will become mandatory under Section 1600.

The steps required to complete the proposed survey and the fact that the survey would be mandatory under Section 1600 imposes a new obligation for all owners, operators, and users of the bulk power system. Counting all low impact cyber assets that meet and do not meet the BES Cyber Asset definition is a particular concern as CIP 003 Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Counting low impact cyber assets is not required by CIP version 5, but is required by NERC’s proposed survey. The proposed survey also defines the types of cyber assets to count, which is new and specific to the proposed survey and a part of CIP version 5.

The survey forces entities to apply the BES Cyber Asset definition to each cyber asset associated with “low impact” control centers, transmission stations or substations, and generation plants. However, CIP-002-5.1 Requirement 1.3 only requires that entities “identify each asset that contains a low impact BES Cyber System according to Attachment 1, Section 3.” The standard also specifically states that “a discrete list of low impact BES Cyber Systems is not required.” To comply with the standard, an entity must identify all of their assets (e.g., control centers, substations, generation plants) that meet the asset description in CIP-002-5.1, R1 (“R1 assets”) and then apply the Attachment 1 Medium and High Impact criteria to these assets to identify and inventory all associated high and medium impact BES Cyber Systems. For R1 assets that do not contain any High or Medium Impact BES Cyber Systems (“low impact assets”), entities can choose to apply the BES Cyber Asset definition to cyber assets at these assets or identify that the asset contains a low impact BES Cyber System.10 An entity is not required by CIP-002-5.1 to identify and assess every cyber asset associated with a low impact asset. However, the proposed survey would require entities to identify, assess, and inventory all of the cyber assets at low impact cyber assets, which imposes a new burden on entities that is not also required by the standard.

The burden imposed by the proposed survey is significant. NERC estimates that the counting and subsequent categorization by the NERC-provided cyber asset types included in the proposed survey will

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9 Id.
10 CIP-002-5.1 Requirement R1 Part 1.3
require the expenditure of, over $8 million,\(^\text{11}\) in a condensed period of time (70 days).\(^\text{12}\) But, this $8 million estimate is based on NERC’s estimate of 40 – 100 hours per entity. EEI members estimate over ten times the NERC estimate to complete the proposed survey, which could escalate costs to the industry to more than $80 million. These costs for a survey to help the Commission better understand the BES Cyber Asset definition is unreasonable and unduly burdensome.

The scope and burden of the proposed survey will also not help “other entities implementing CIP version 5 in identifying BES Cyber Assets”\(^\text{13}\) as the Commission intended. Instead, the proposed survey will harm entities by requiring them to pull resources devoted to implementing CIP version 5 to complete the proposed survey. After NERC submits the informational filing to the Commission, entities will have already invested resources on identifying BES Cyber Assets, which they may have to change based on the information filing NERC submits to the Commission. Requiring all registered entities to respond to the survey increases the burden to the bulk power system owners, operators, and users without a commensurate benefit to reliability.

3. The proposed survey is unclear, which will increase the burden for entities to respond to the survey and make it difficult for NERC to accurately respond to the Commission in an informational filing.

NERC’s issuance of a FAQ document on the proposed survey is a good indication that the survey is unclear. The proposed survey is also flawed because the tables assume that control centers, transmission stations or substations, and generation plants will be identified as low, medium, high impact. However, these assets may actually have a mix of assets and systems at different impact ratings. The survey tables require impact rating categorization at the control center, transmission station or substation, and generating plant level; however, CIP-002-5.1 Attachment 1 is focused on categorization at the BES Cyber System level.

For example, under CIP-002-5.1 Attachment 1 Section 2.1, consider a generation plant that has two generating units each with an 800 MW net Real Power capability over the preceding 12 months. The generation plant itself is not considered medium impact. Rather, it is only a candidate for having medium and/or low impact BES Cyber Systems since the plant has a 1600 MW Real Power capability over the previous 12 months. To properly classify the BES Cyber Systems, cyber assets for the site need to be evaluated to determine if it impacts the entire 1600 MW output from the plant or only 800 MW from a single unit within 15 minutes. The classification depends on the way the control systems and protection systems are installed. BES Cyber Systems that impact the entire 1600 MW output would be considered medium impact. BES Cyber Systems that only impact 800 MW would be considered low impact.

The proposed survey refers to locations of operating elements under the control center section, but does not define what a separate location means. For example, are operating elements in the same location if they are in the same room, building, or street address?

\(^{11}\) Assuming an average of 75 hours per entity to complete the survey (using NERC’s estimate), 1475 Registered Entities, and $72/hour (based on FERC’s estimates in Order No. 791 P 240): 75 hours/entity * 1475 entities * $72/hour = $8 million

\(^{12}\) NERC has estimated between 40 and 100 hours, depending upon the size of the entity.

\(^{13}\) Order No. 791, 145 FERC ¶ 61,160 at P 124 (2013).
The survey should also be limited to Cyber Assets that are associated with the bulk power system and subject to the CIP Standards. The proposed survey requires counting cyber assets that meet and do not meet the BES Cyber Asset definition; it is unclear whether every programmable electronic device (e.g., every corporate printer or programmable telephone) should be counted to complete the survey. Also, some assets or systems (e.g., nuclear plants and registered distribution providers) are exempt from the standards. It is unclear whether this survey applies to these exempt systems, and what registered entities should do if they only have exempt systems (e.g., nuclear generation plants).

These ambiguities make it even more burdensome for entities to respond because the proposed survey requires entities to not only use CIP-002-5.1 and the NERC-prescribed Type of Cyber Asset, but also determine whether operating elements of a control center are at separate locations and whether certain cyber assets or systems should even be counted. This ambiguity will also make it difficult for NERC to interpret the survey results as each entity could interpret the request differently.

The proposed survey will also produce a large amount of range and explanation information for NERC to analyze and validate. NERC will receive responses from over a thousand entities, which will yield thousands of tables containing cyber asset counts. Some, not all, of this data will be relevant or meaningful. The function descriptions that accompany these tables are likely to vary in detail and format, which will increase the burden on NERC to read and interpret these responses. We do not believe that NERC will be able to process the data in a useful or accurate fashion in the time frame required by the Commission to respond to Order No. 791.14

Part 2: Alternative Qualitative Approach – Use the pilot program participants to answer the Commission’s Order No. 791 questions, follow up with the program participants to validate their responses, and share with Registered Entities to gather additional feedback, including different approaches or concerns.

In Order No. 791-A, the Commission said:

We clarify that Order No. 791 did not direct NERC to conduct and inventory-type survey of all Cyber Assets impacted by the 15-minute parameter. Instead the scope of the survey was left for NERC to determine. Order No. 791 intended that NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 in the required NERC informational filing. For example, NERC could use the participants in the pilot program, discussed above, as the basis for the survey.15

We agree with the Commission’s suggestion and strongly recommend that NERC start with the pilot participants to explain:

14 In the proposed survey, NERC identified five staff members. Assuming NERC received 1475 responses, which take an average of 4 hours (per response) to analyze, and that NERC staff works 40 hours per week, it would take these five staff members 30 weeks just to analyze the responses. Assuming the proposed survey is issued on August 18, it will be due on October 27, which only leaves about 14 weeks for NERC to analyze and validate the responses and prepare the informational filing by February 3, 2015. NERC would need more than 10 full-time staff devoted to analyzing and validating the responses, aggregating them, and preparing the informational filing.

15 Order No. 791-A at P 21 (2014).
(1) specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;
(2) types of functions of Cyber Assets that meet the 15 minute parameter;
(3) common problem areas with entities improperly designating BES Cyber Assets; and
(4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.\textsuperscript{16}

The six volunteer responsible entities of the pilot program have already devoted resources “to work with NERC and the Regional Entities to implement the CIP version 5 standards in an accelerated timeframe.” From October 2013 through June 2014, the participants focused on the technical solutions and processes needed to meet version 5, which included facing “key issues, challenges, and potential resolutions relating to” implementing version 5.

Notably, the questions proffered by the Commission are qualitative (not quantitative) in nature. Once the pilot participants’ descriptive information is aggregated and summarized to maintain confidentiality, NERC or the regions could then conduct a qualitative survey to obtain specific feedback on the responses to these questions from a sample of other registered entities and the rest of the regions. A mandatory Section 1600 survey of all Registered Entities is not necessary to collect enough information to be informative to FERC’s directive. A qualitative survey targeted at obtaining feedback on answers to the Commission’s questions rather than the comprehensive data collection in the proposed survey will significantly reduce the burden on bulk power system asset owners, operators, users, and NERC itself. This alternative approach would address the Commission’s directive in Order No. 791, reduce the burden on all entities and NERC, and thereby allow all entities, including NERC, to more knowledgably focus on the actual implementation of CIP version 5.

The pilot program responses to the Commission’s questions from Order No. 791, compiled and summarized by NERC, will not only reduce the burden on entities, but will provide a useful resource to help them identify BES Cyber Assets as they implement CIP version 5. Focusing on the Commission’s questions will also improve the quality of the responses to NERC avoiding the confusion (see part 1.3 above) generated by the proposed survey. This approach also supports the Commission’s intent explicitly expressed in Order No. 791: “This filing should also help other entities implementing CIP version 5 in identifying BES Cyber Assets.”\textsuperscript{17}

Conclusion

In conclusion, we strongly encourage NERC to consider our proposed \textit{Alternative Qualitative Approach}. We do not recommend submitting NERC’s posted proposed survey to the NERC Board of Trustees for approval. Rather than needlessly forcing all owners, operators, and users of the bulk power system to engage in burdensome and expensive data collection exercises of questionable value, NERC should use the Commission’s scope as suggested in FERC Order No. 791-A as an opportunity to facilitate common

\begin{footnotes}
\item[17] \textit{id.}
\end{footnotes}
understanding of the BES Cyber Asset definition and then use this information to report back to the Commission, as directed, regarding the efficacy of the 15-minute parameter and other aspects of the definition.
Comments of

PSEG
1. PSEG is concerned with providing specific counts of the devices and the detail of what types of cyber assets exist at our particular Facilities. Thus, PSEG recommends only the consideration of what type of BES Cyber System exists at a given BES Facility/location. This will allow the aggregation of cyber assets into systems and would still provide the needed information to answer why a specific BES Cyber System would be excluded due to a 15 minute parameter. Please see attached spreadsheet.

2. PSEG would also like to point out that while one company may have a process where a specific BES Cyber System falls within the 15 minute window, another company’s process may account for such a failure, thus excluding such a system. PSEG cautions NERC to consider the BES Cyber Systems of each entity on their own merits/circumstances. A similar device may be a BES Cyber System for one entity but not for another. Thus, the answers to the survey cannot be utilized as a baseline for compliance purposes as this may have unintended impacts on the industry.
<table>
<thead>
<tr>
<th>Type of Cyber System</th>
<th>Description (only required for Other)</th>
<th>BES Cyber System at High Impact Control Center (Y/N)</th>
<th>BES Cyber System at Medium Impact Control Center (Y/N)</th>
<th>BES Cyber System at Low Impact Control Center (Y/N)</th>
<th>BES Cyber System at Medium Impact Trans Station or Substation (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed Control System</td>
<td>Balance of Plant Control</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Emissions Control System</td>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Emissions Control System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>RTU</td>
<td>Station to TOP/BA/RC unit operating data and status communications interchange</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Combustion Turbine Control System (CT Unit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Application Server</td>
<td>Example: System 1</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Application Server</td>
<td>Example: LDAP</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>BES Cyber System at Low Impact Trans Station or Substation (Y/N)</td>
<td>BES Cyber System at Medium Impact Generation Plant (Y/N)</td>
<td>BES Cyber System at Low Impact Generation Plant (Y/N)</td>
<td>Was Cyber System Type excluded ONLY based upon 15 minute exclusion? (Y/N)</td>
<td>If Yes to 15 minute exclusion, explain why</td>
<td></td>
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<tr>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<td>N</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

In some of the plants, the loss of the CEMS would not impact the BES within 15 minutes, but would take a considerably longer period of time.

<table>
<thead>
<tr>
<th>Y</th>
<th>Y</th>
<th>Y</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Some auxiliary applications would not impact the BES within 15 minutes - e.g. LDAP

N | N | N | Y
Comments of
APS
North American Electric Reliability Corporation
3353 Peachtree Road, NE Suite 600
Atlanta, GA 30326
Submitted Via email: BESCyberAssetSurvey@nerc.net

Re: Comments regarding NERC proposed BES Cyber Asset Survey

Arizona Public Services (AZPS) appreciates the opportunity to provide comments on the scope and content of the BES Cyber Asset Survey that NERC previously circulated. AZPS has thoroughly reviewed the Survey and FERC Order 791 and consulted with a number of industry stakeholders and internal subject matter experts in developing these comments.

AZPS recognizes NERC’s obligation to respond to the request of FERC in paragraph 124 of Order 791 to answer the following four questions:

1. specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;
2. types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why;
3. common problem areas with entities improperly designating BES Cyber Assets; and
4. feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.

The survey as currently proposed by NERC, meets the initial request in paragraph 124 to create a list of cyber assets that are included or excluded. However, simply creating a list of the number of assets does not provide the data necessary to answer the underlying questions posed by FERC.

In NERC’s filing to FERC it clearly takes a systems based approach using examples of systems that might meet the criteria “... the 15-minute parameter will typically result in the identification of SCADA, Energy Management Systems, transmission protection systems, and generation control systems...”\(^1\). In the same paragraph systems that might not meet the criteria are also listed. “... “Typical systems that might be excluded by the 15-minute parameter are systems that collect data for engineering analysis and support, and maintenance rather than providing input to the operator for real-time operations or triggering automated real-time operations.”\(^2\).

AZPS concurs with NERC’s statements. Version 5 of the NERC CIP standards takes a systems rather than asset based approach. It focuses on the BES Reliability Operating Services (BROS) that make up the BES Cyber Systems. Therefore we would suggest that it would be a more appropriate approach to survey the systems that are included or excluded based on the 15-minute criteria.

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\(^1\) FERC Order 791 § 123
\(^2\) FERC Order 791 § 123
The assets themselves are determined by evaluating the BROS. It is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint.

Even with a systems based approach, as suggested here, industry will struggle to provide meaningful data to NERC so far ahead of the effective date of the new standards. A tremendous amount of the evaluation work is yet to be completed, especially with respect to category low assets. AZPS would suggest that in order for NERC to meet the reporting obligations in Order 791 and provide meaningful analysis of the inclusions and exclusions based on the 15-minute criteria it should work with the Version 5 pilot study participants to collaboratively develop the report it will present to FERC in early 2015. Those participants are likely the most sophisticated and advanced in their implementation of CIP Version 5 and best able to provide thoughtful context on the inclusion and exclusion of BES Cyber Systems.

Assuming NERC adopts this approach, AZPS would further suggest that as NERC refines the data collection process for next year that it considers taking the approach of gather sample data sets of high, medium and low cyber systems. This would eliminate the requirement to complete a full inventory of cyber systems ahead of the standard effective date but would still provide NERC with broad perspective on the industry implementation of NERC CIP version 5.

Additionally, AZPS requests clarification on the validation of data provided to NERC through this process. NERC states the data or information collected will be validated by:

- Identifying Registered Entities applicable to CIP Version 5
- Instructing the entities on how to respond to the survey
- Collecting and sorting the data
- Comparing a list of Registered Entities with the respondents to ensure the responses are received as request.
- NERC will further validate the data provided.

The steps above state how NERC will ensure appropriate entities responded but does not clearly define how NERC will validate the actual data gathered. AZPS is requesting additional clarification around how the actual data gathered by NERC (regardless of the survey method used to gather the data) will be validated to comply with NERC RoP Section 1600.

Finally, AZPS would like to thank NERC for reviewing and considering all of the industry comments, and for continuing to collaborate with Registered Entities in our joint mission of enhancing the Reliability of the Bulk Electric System. If you have any additional questions please do not hesitate to contact Janet Smith.
Comments of
PGE
July 15, 2014

Subject: Request for Public Comment on Proposed Request for Data or Information Survey Regarding the Scope of the Term "BES Cyber Asset"

Portland General Electric (PGE) appreciates the opportunity to comment on the proposed ‘Survey Regarding the Scope of the Term BES Cyber Asset’, which was developed pursuant to Order 791 of the Federal Energy Regulatory Commission (FERC).

PGE is a member of both the Edison Electric Institute (EEI) and the Western Interconnection Compliance Forum (WICF). The current Chair of the WICF Steering Committee, Matt Jastram, is a Compliance and Cyber Security Supervisor at PGE. Both EEI and WICF are submitting comments that PGE supports. PGE recommends that the proposed survey not be submitted to the NERC Board of Trustees without first considering industry comments and recommendations.

PGE strongly agrees with EEI’s comment that this proposed survey creates a new obligation and requires early implementation of CIP-002-5.1. By mandating a response from all owners, operators, and users of the bulk power system (NERC Rules of Procedures Section 1600) within 70 days of issuance of the survey, NERC will impose a significant burden on entities rather than help them implement CIP Version 5 as the Commission intended for the survey in Order 791. Most entities are still in the early stages of identifying what is in scope for them under CIP-002-5, and to hinder that process with an inventory-style survey of all Cyber Assets impacted by the 15-minute parameter is unreasonable, and unnecessary for NERC to be able to respond to the questions posted in Order 791 in the required NERC informational filing. PGE recommends that NERC limit the survey to the pilot program participants to gather the data needed to respond to the informational filing.

Should NERC proceed with issuing a mandatory industry-wide survey, PGE strongly recommends increasing the allotted response time. As many entities have yet to fully identify their BES Cyber Systems under CIP-002-5.1, requiring them to essentially perform a full inventory of High, Medium, and Low impact BES Cyber Assets in 70 days could result in a large amount of inaccurate data being provided to NERC. Increasing the response time to 120 days would increase the amount of accurate data that entities are able to supply to NERC, and still give NERC ample time to compile the data before its response deadline to FERC on February 3rd, 2015.

PGE also suggests that NERC consider removing Low Impact BES Cyber Assets and Low Impact facilities from this survey. Requiring entities to provide an inventory of Low Impact rated systems, their related cyber assets, and their locations goes beyond the scope of the CIP Version 5 standards. CIP Version 5 does not require a list of Low Impact cyber assets, as stated in NERC’s filing for comment of CIP-003-6, Requirement 2 Note, dated May 30, 2014.

PGE shares NERC’s commitment to the reliability and security of the electric grid. We are grateful for the opportunity to help shape a survey that meets FERC’s goals while minimizing the burden on utilities that are already expending significant time and resources to come into compliance with Version 5.
Comments of CenterPoint
Comments of CenterPoint Energy Houston Electric, LLC

CenterPoint Energy Houston Electric, LLC (“CenterPoint Energy” or “the Company”) is submitting the following comments as requested for the Survey Regarding the Scope of the Term “BES Cyber Asset” posted on May 30, 2014.

CenterPoint Energy supports NERC’s efforts in providing the necessary information to the FERC in response to the stated directive:

“…conduct a survey of Cyber Assets that are included or excluded under the new BES Cyber Asset definition during the CIP version 5 Standards implementation periods. Such data will help provide a better understanding of the BES Cyber Asset definition. Based on the survey data, NERC should explain in an informational filing the following: (1) specific ways in which entities determine which Cyber Assets meet the 15 minute parameter; (2) types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why; (3) common problem areas with entities improperly designating BES Cyber Assets; and (4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition. The informational filing should not provide a level of detail that divulges CEII data. This filing should also help other entities implementing CIP version 5 in identifying BES Cyber Assets.”

However, the Company suggests that the approach outlined in the draft survey is not optimal. The current level of detail requests too much information on each company’s topology, provides a baseline architecture, and provokes security concerns. CenterPoint Energy acknowledges the protections afforded by Section 1500 of the ROP; however, the Company disagrees with the statement “Although the proposed Data Request does not require the disclosure of confidential or critical energy infrastructure information,” noted on page 26 of the request. Such aggregated information meets the definition of CEII (CEII is specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure (physical or virtual) that: 1) Relates details about the production, generation, transmission, or distribution of energy; 2) Could be useful to a person planning an attack on critical infrastructure; 3) Is exempt from mandatory disclosure under the Freedom of Information Act; and 4) Gives strategic information beyond the location of the critical infrastructure.) The Company is not confident this information
will be appropriately protected as it is transmitted and stored. Furthermore, CenterPoint Energy believes that assets that are excluded should not be counted, but their types or functions and the exclusion rationale described at a high level. Also, an inventory of Low Impact BES Cyber Systems is not needed per the approved CIP Version 5. The FERC agreed with the industry in Order 791 on the burden versus benefit of this activity. This request backtracks to the issues of inventories for Low Impact BES Cyber Systems and distraction from transition efforts for the approved CIP Version 5 during an already constricted timeframe. (FERC Order 791, pg.67, paragraph 111)

CenterPoint Energy proposes an alternative approach that includes elements noted in the comments of EEI and other applicable entities. The Company recommends that NERC work with study participants on initial responses to the 4 areas to be covered in the informational filing as they are most likely ahead of the rest of the industry on the implementation path. For a quantitative element of the survey, Part 2, Question 1 should be posed to the study participants with comments or voting by the other applicable entities to follow. NERC may provide the study participant responses to applicable entities, allow the entities to vote on the approach most similar to their own, and provide additional comments as necessary. Part 2, Question 2 should be reworded to reflect the language of the directive: “types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why”. This approach is still in keeping with the idea that, assets that are excluded don’t have to be counted, but a high-level description could be provided.

If NERC insists on moving forward with the current format, CenterPoint Energy recommends the following changes to the draft survey.

The FERC directive focuses on the clarification of the definition for BES Cyber Asset. CenterPoint Energy questions the inclusion of counts of facilities in the draft survey. Therefore, the Company proposes that NERC delete the following content from Part 1 – Section I (page 10):
For purposes of identifying Control Centers under this survey, if you have separate locations that contain the operating elements (i.e., control room where System Operators interact with HMI devices) and data centers (i.e., “computer rooms” containing servers, data communications and data storage), please count each location separately in the count of Control Center locations. Alternatively, if you have a one-to-one relationship between the operating and data centers, and they are located in the same building or location, only count those as a single location:

a. Please specify the total number of Control Centers you own or operate: _____
   i. Please specify the number of Control Centers you own or operate that meet the description of a Control Center in Section 1 (High Impact Rating) of Attachment 1 to CIP-002-5.1: _____
   ii. Please specify the number of Control Centers you own or operate that meet the description of a Control Center in Section 2 (Medium Impact Rating) of Attachment 1 to CIP-002-5.1: _____
   iii. Please specify the number of Control Centers you own or operate that meet the description of a Control Center in Section 3 (Low Impact Rating) of Attachment 1 to CIP-002-5.1: _____
   iv. If the total number of Control Centers you own or operate identified above does not equal the sum of High, Medium, and Low Impact Control Centers identified in parts i, ii, and iii, please explain why:

The Company also proposes that NERC delete the following content from Part 1 – Section II (page 13-14).

a. Please specify the total number of transmission stations and substations you own or operate: _____
Although CenterPoint Energy does not own any Generation Plants, the Company recommends the changes noted above to Part 1 – Section III regarding the “total number of generation plants” questions for consistency.

The FERC directive does not indicate that excluded assets have to be counted. CenterPoint Energy proposes that NERC delete the sections related to “For Cyber Assets that do NOT Meet the Definition of BES Cyber Asset…”.

Additionally, the descriptions of the Cyber Assets commonly installed and used at transmission station substation are not clear or are inaccurate. CenterPoint Energy requests the following revisions to the tables/descriptions:

- Revise the table entry from “Intelligent Electronic Device (IED)/Relay” to “Protective Relay (Intelligent Electronic Device)” as the current description would include devices that are not Cyber Assets.
- Remove “Tap Changer” as it is not a Cyber Asset.

Questions “d.” (Page 13, 19, and 23) and “IV. Other locations – a.” (Page 23) exceed the FERC directive. CenterPoint Energy requests that the questions be deleted from the survey.
d. Please also describe, if applicable, why Cyber Assets or functions performed by the Cyber Assets are excluded from the definition of BES Cyber Asset for a reason other than the 15-minute impact threshold.

IV. Other Locations:

a. If you have any other Cyber Assets that control BES Elements outside of Control Centers, transmission stations or substations, and generation plants, please describe their location and function, and explain whether they meet the definition of BES Cyber Asset.
CenterPoint Energy believes that the questions below are also beyond the FERC directive and recommends the edits as shown below.

**Part 2 – Please describe the process you are using or will use to determine if a particular Cyber Asset meets the definition of BES Cyber Asset. Please also describe any challenges you have encountered while creating or executing your process.**

Which systems or network components associated with BES Cyber Systems would not be considered in scope of the CIP standards? Are these systems considered programmable? If not, what are their characteristics?

How would you define programmable electronic device?
Comments of
Dayton Power & Light
Overview
In FERC order 791, NERC was directed to, “Conduct a survey of responsible entities during the CIP version 5 Standards implementation period to determine the number of assets, by type that fall outside the definition of BES Cyber Assets because the assets do not satisfy the ‘15-minute’ parameter and to submit an informational filing assessing, based on the survey results, whether the BES Cyber Asset definition will, with the 15-minute parameter, cover the assets that are necessary to ensure the reliable operation of the Bulk-Power System.”

FERC’s Intent
FERC’s intent in directing NERC to conduct a BES Cyber Asset Survey to more fully understand the scope of the BES Cyber Asset definition based on the 15-minute parameter is described in FERC Order 791 paragraph 116.

Docket No. RM13-5-000

a. 15-Minute Parameter

NOPR
116. The NOPR sought comment on the purpose and effect of the 15-minute parameter in the BES Cyber Asset definition. In particular, the NOPR sought comment on the types of Cyber Assets that would meet the —within 15 minutes—parameter. Further, the NOPR sought comment on the types of assets or devices that the 15-minute parameter would exclude and, in particular, whether the —within 15 minutes—parameter excludes devices that have an impact on the reliable operation of the bulk electric system. The NOPR also sought comment on whether the use of a specified time period as a basis for identifying assets for protection is consistent with the procedures adopted under other cyber security standards, such as the NIST Risk Management Framework, that apply to industrial control and Supervisory Control and Data Acquisition (SCADA) systems, as well as traditional information technology systems.
FERC's Directive
The directive in FERC Order 791 paragraph 124 asks NERC to explain four items in an informational filing.

124. Accordingly, the Commission directs NERC to conduct a survey of Cyber Assets that are included or excluded under the new BES Cyber Asset definition during the CIP version 5 Standards implementation periods. Such data will help provide a better understanding of the BES Cyber Asset definition. Based on the survey data, NERC should explain in an informational filing the following: (1) specific ways in which entities determine which Cyber Assets meet the 15 minute parameter; (2) types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why; (3) common problem areas with entities improperly designating BES Cyber Assets; and (4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition. The informational filing should not provide a level of detail that divulges CEII data. This filing should also help other entities implementing CIP version 5 in identifying BES Cyber Assets.
FERC Order 791-A
FERC responded to EEI’s request for clarification regarding the burden for an inventory-type survey in paragraph 21 of FERC Order 791-A, paragraph 21.

21. The Commission grants clarification and denies rehearing with respect to EEI-EPSA’s requests. We clarify that Order No. 791 did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter. Instead, the scope of the survey was left for NERC to determine. Order No. 791 intended that NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 in the required NERC informational filing. For example, NERC could use the participants in the pilot program, discussed above, as the basis for the survey.20

Alternative to the proposed survey
• Compile methodologies for determining the scope of assets that would/would not be in scope for version 5, specifically pertaining to the 15-minute parameter, from the participants in the pilot program as the basis for the survey.

• NERC could ask all entities to volunteer their methodologies for determining the assets that are in/out of scope for version 5.

• Have pilot participants and/or volunteers answer the questions from the NERC directive.

Conclusion
FERC did not direct:
• An inventory-type survey, which would be far more burdensome than 40 to 100 hours.
• A NERC Rules of Procedure Section 1600 survey with 100% sample size.

FERC suggested the option of looking at feedback and lessons learned from the implementation study. If a broader-based survey is desirable, responses for the questions could be shared with industry and the survey could ask for other:
• Ways to determine which Cyber Assets meet the 15-minute parameter
• Functions of Cyber Assets that are excluded and why.

As FERC is looking for the methods utilized by entities as opposed to the lists of assets that will or will not fall into scope this would be a better representation of the intent of what FERC instructed NERC to discover. All information garnered through this survey could also be used as guidance for all entities to use during their assets evaluation process.
Comments of
Northeast Utilities
Northeast Utilities (NU) appreciates the opportunity to provide comments on the survey regarding the Scope of the Term “BES Cyber Asset.” NU is a Fortune 500 energy company based in Connecticut and Massachusetts. Through its subsidiaries in Connecticut, Massachusetts, and New Hampshire, it owns and operates Transmission, Distribution, Generation, and Natural Gas systems for more than 3.5 million combined electric and gas customers. Northeast Utilities is registered for 22 NERC functional registrations that comply with the mandatory reliability standards, including the CIP standards.

NU recommends that NERC reconsider the proposed survey. The survey should focus on a more qualitative analysis versus a quantitative analysis with an emphasis on information provided by pilot program participants as suggested in Order No. 791-A. Order Nos. 791 and 791-A did not direct NERC to conduct an inventory-type survey. Rather, the FERC intended that NERC develop a survey of sufficient scope in order to respond to the questions and prepare implementation guidance. In fact, the Federal Energy Regulatory Commission (“FERC or Commission”) also suggests that NERC could use the pilot program participants “as the basis for the survey.”

The proposed inventory-type survey is unduly burdensome to entities and is inconsistent with the guidance provided in Order 791-A, in which the Commission clarified that an inventory-type survey of all Cyber Assets impacted by the 15 minute-parameter was not needed for NERC to meet the survey directive. The proposed survey requires entities to count all of the cyber assets, and identify the type of asset at each location. Counts of cyber asset for low impact BES Cyber Systems are not required per CIP-002-5.1, Requirement R1.3, which specifically states “low impact BES Cyber Systems do not require discrete identification.” This type of survey would re-direct resources from the focus of implementing CIP version 5 to obtaining information for the survey and provide little value. Focusing on qualitative questions and responses would prove to be more beneficial to broadening industry’s knowledge and understanding.

Both NERC, the Regional Enforcement Bodies and Responsible Entities would benefit by surveying the pilot program entities that implemented CIP version 5 in order to develop further implementation guidance and common understanding of BES Cyber Asset definition. By focusing the survey on entities that have already implemented the CIP version 5 standards, the information gathered will be more comprehensive, relevant, and useful because it is based on experience.

NU agrees with the Commission’s suggestion and strongly recommends that NERC follow the Commission’s example and start with the pilot participants to explain:

(1) specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;

(2) types of functions of Cyber Assets that meet the 15 minute parameter;

(3) common problem areas with entities improperly designating BES Cyber Assets; and

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2 Order No. 791-A, 146 FERC ¶ 61,188 at P21 (2014).
(4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.  

In conclusion, NU strongly encourages NERC to re-consider the proposed survey approach before submitting it to the NERC Board of Trustees for approval. The survey should be used an opportunity to further the industry’s understanding by leveraging the knowledge of those that have already demonstrated compliance via the pilot program.

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Comments of PNMR
PNM Resources (PNMR) is pleased to submit these comments on the Survey Regarding the Scope of the Term “BES Cyber Asset.” PNM Resources is the holding company for Public Service Company of New Mexico and Texas New Mexico Power.

The North American Electric Reliability Corporation (“NERC”) proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk power system to submit data to “satisfy the Commission’s 1 directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.” 2 The Survey Regarding the Scope of the Term BES Cyber Asset (“proposed survey”) is the mechanism NERC proposes to use to collect the Commission directed data.

The proposed survey should not be submitted to the NERC Board of Trustees due to a number of concerns. This response will be patterned off of the EEI response and in most instances, consistent with their concerns.

Part 1 of these comments describes these concerns with the proposed survey and part 2 describes an alternative approach to address the Commission’s directive. PNMR encourages NERC to consider the alternative approach to significantly recue the burden to the owners, operators, and users of the bulk power system and NERC itself in responding the Commission. The alternative approach will also provide a more useful tool to help the Commission, registered entities, and regional entities better understand the BES Cyber Asset definition for implementation of CIP version 5.

Part 1: Proposed Survey Concerns – Key concerns with the proposed survey include 1) the scope of the proposed survey is not necessary to respond to the Commission’s directive, 2) the survey will impose a significant burden to entities, 3) the survey itself is unclear, which will make it difficult for NERC to respond to the Commission, 4) requiring entities to capture the level of detail for “Low” BES Cyber Assets and non-BES Cyber Assets goes beyond what the CIP-002-5.1 standard requires.

1. PNMR agrees with the statements made by EEI in relation to the scope of the proposed survey being not necessary to respond to the Commission’s directive.
2. PNMR agrees with the statements made by EEI in relation to the fact that the survey will impose a significant burden to entities. PNMR is estimating that it will take at least 5000 FTE hours to complete the survey as it is currently written. The estimated cost to PNMR alone would be 200K. PNMR believes that this will pose a significant burden.
3. PNMR agrees with the statements made by EEI in relation to the survey being unclear. For the reasons already stated by EEI, PNMR believes that not only will it be difficult for our entities to understand where to limit the scope of the survey; it will also be difficult for NERC to respond to the Commission with vast amounts of disparate data provided by all entities.
4. PNMR believes that requiring entities to capture the level of detail for “Low” BES Cyber Assets and non-BES Cyber Assets goes far beyond what the CIP-002-5.1 standard requires. In order to

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1 Federal Energy Regulatory Commission (“FERC or the Commission”).
comply with this survey, entities will be forced to create and execute their CIP-002-5.1 procedure whether they are ready to do so or not. PNMR has no intention of capturing non-BES Cyber Asset information in the CIP-002-5.1 process and procedure, let alone capture the level of detail for Low BES Cyber Systems that is being asked for in the survey. Again, PNMR believes that this request is over-reaching and will not benefit the entities in preparing for Version 5 compliance nor will it benefit NERC in responding to the Commission.

**Part 2: Alternative Approach – Use the pilot program to answer the Commission’s Order No. 791 questions, follow up with the program participants to validate their responses, and share with Registered Entities to gather additional feedback, including different approaches or concerns.**

PNMR agrees with the statements made by EEI in relation to the proposed alternative approach; i.e. utilizing the pilot program participants to respond to the Commission’s survey directive, which the Commission suggested in the clarification, order no. 791-A. PNMR does however suggest that NERC alter the survey to address the other concerns mentioned above so that no matter which entity is filling it out, they are doing so with the correct scope and clarity needed.
Comments of
Black Hills
TO: NERC Project 2014-02 Drafting Team  BESCyberAssetSurvey@nerc.net

RE: Comments on Survey Regarding the Scope of the Term “BES Cyber Asset”

Thank you for the opportunity to comment on this proposed survey. Although Black Hills Corporation (NCR05030) supports the comments submitted by WICF, also note the following additional comments on behalf of Black Hills Corporation (BHC).

BHC recognizes the complexity of latest version of CIP standards, and the desire to create some starting benchmarks to help define the scope of these standards. BHC has been actively involved in the WECC region through the development of the CIP v4 and V5 standards, and has diligently tried to stay on top of the evolving standard language.

This is true not only for the CIP standards but also for the similarly evolving NERC RAI. The Reliability Assurance Initiative has been welcomed because of NERC’s recognition that the RAI will be successful if the “…resources expended to achieve and monitor compliance and carry out enforcement are sufficient on the larger risk areas and not unnecessarily over applied on lower risk areas…”¹

It is BHC’s belief that the subject survey does not provide the return on investment suggest by the RAI whitepaper. Black Hills believes that payoff on this survey can be significantly improved as compared to the entity effort required, by re-scoping the survey in two specific areas:

1) Sampling of Entities: There are a handful of entities throughout the regions that participated in the CIP v5 Pilot Program, who have a heightened awareness of BES Cyber Assets. These folks would provide high-quality data points for this survey and certainly should be included. There may be another dozen or two utilities who would round out the survey inputs with quality data, given sufficient time and guidance. However, the majority or registered entities, particularly the smaller ones, are likely at the early stages of on-boarding CIP v5. Forcing survey data from these entities will likely lower the data accuracy and contaminate the entire data pool.

2) Inclusion of Low Impact Cyber Assets: Based upon experience with CIP v3, most applicable entities will have a reasonable handle on their High and Medium Impact cyber assets. The High and Medium impact assets would seem to be the ones meeting the spirit of the RAI. To require the similar inclusion of Low Impact will certainly require much more effort from all entities, because of greater quantity and reduced quality of raw data; and by definition, the value of this low impact asset information to the NERC analysis will be much less than for Medium and High Value assets. Therefore, BHC recommends that this first round of the survey solicit information on just the Medium and High Impact assets. The analysis of this first round of survey inputs could dictate the value of a deeper dive, and the intervening time would give entities additional time to prepare their CIP v5 data.

Sincerely,

Robert H. Case
NERC Compliance Manager

¹ NERC RAI White Paper (February 2013)
Comments of BPA
Narrative 1: As part of the transition from CIP Version 3 to CIP Version 5 standards, Entities are currently drafting, developing, testing and validating the processes for the identification and classification of BES Cyber Assets, Systems and their respective site rankings and/or classifications. For a survey such as this, Entities would be required to fast track the development and implementation of Version 5 processes in order to properly complete this survey.

Recommendation 1: Entity recommends waiting until CIP Version 5 programs and processes have developed and matured. This will provide Entities the tools to help NERC better understand and describe the BES Cyber Asset identification and classification processes, as well as ensure a more accurate tally of Cyber Assets and their associated Systems and locations. Together, these results will provide better industry guidance.

Narrative 2: The survey proposed, meets the initial request in paragraph 124 to create a list of cyber assets that are included or excluded. However, simply creating a list of the number of assets that are in or out does not provide the data necessary to answer the underlying questions posed by FERC.

Recommendation 2: We would suggest that it would be a more appropriate approach to survey the systems that are included or excluded based on the 15-minute criteria. The assets themselves are determined by evaluating the BROS. It is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint. A secondary benefit of a systems based approach, as suggested above, would be that industry may be able to provide this information to NERC sooner than a count of the actual number of devices.

Narrative 3: Entity believes that the survey places a large burden on the entities that must develop inventories and respond to this request. Entity notes that Order 791 did not require NERC to survey all registered entities.

Recommendation 3: Entity recommends that NERC reduce the burden on registered entities by proposing to survey either a sampling of entities across the BES, or request that entities send data from a sample facility, or request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions.

Narrative 4: While the survey aligns somewhat with CIP-002-5 processes, because the Version 5 processes are in draft form and function, attempting to use them early will produce specious results.

Recommendation 4: This entity recommends such a survey occur after the related CIP Version 5 processes for identifying and classifying BES Cyber Assets, Systems and sites or locations is completed and validated. As mentioned above, Entities will be able to more accurately assess BES Cyber Assets and provide NERC with more valuable information about the process, impact and function.

Narrative 5: The survey scope requires labor intensive tasks in order to assess, tabulate and differentiate all Cyber Assets, their related Systems and locations, both in scope and not in scope. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets than required alone by CIP Version 5. For example, Version 5 does not require a list, whereas this survey requires the development of a list. And Low Impact Generation plants for example may contain thousands of specialized Cyber Assets. In this regard, not only would Entities be required to develop new and untested Low Impact or No Impact assessment processes, but they would also need to shift or add qualified staff in order to assess the large numbers associated with the survey requirements. Working with untested and immature processes, and shifting resources during the Version 5 transition work, will result in questionable survey results.

Recommendation 5: Entity recommends a survey based on risk and associated with High and Medium Impact BES Cyber Assets and their related Systems and sites/locations. The survey could
also implement a sampling of Low Impact Cyber Assets and their associated Systems or locations but should not require a full inventory.

Narrative 6: The survey questions (as currently written) require the full assessment to be complete for all cyber assets including those in the Low category. CIP Version 5 does not require a list of for the low category.

Recommendation 6: We would recommend a two-phased approach with the High and Medium surveys being completed in January of 2016 and the low Cyber Assets in January of 2017. It is unlikely that industry as a whole will be able to respond with appropriate data in the third quarter of 2014 as indicated in NERC’s preferred timeline. Further we would propose that the survey coincide more closely with the dates in the CIP version 5 implementation plan.

Narrative 7: The timing of the proposed survey is problematic. Entities are in the midst of transitioning from Version 3 to Version 5 as well as preparing for combined audits. This involves developing and implementing new procedures while preparing for Version 3 and Version 5 audits, and validating sound internal CIP compliance practices.

Recommendation 7: Entity recommends a proposed survey be coordinated in such a manner to correspond with an audit, or be performed after CIP Version 5 is implemented and functional.

Narrative 8: The NERC survey and Attachment 1 document lists survey requirements and parameters for devices and systems which are not considered BES Cyber Systems. “Physical Access Control System,” “Locally Mounted Physical Security,” “Network Printer,” etc., for example are non-BES Cyber Systems and are inherently considered to be a class in themselves outside of BES Cyber Assets, i.e., PACS. Part 2 also questions the processes used to determine BES Cyber Assets.

Recommendation 8: Entity recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems. Entity also recommends seeking further comments regarding Entities processes for determination or to request information to ascertain the recommended Entity methodologies and use those as basis in a guidance document.

Information Required by ROP Section 1602.2

Narrative 9: See “Information Required by ROP Section 1602.2,” section b. (p. 25): The second sentence states, "the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards .... ." The last sentence states, "NERC will also use information learned from the Transition Study for the information filing" Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

Recommendation 9: Entity requests that NERC provide the implementation period timeline in the explanation. Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

Narrative 10: The explanation of 1c, how the data will meet its obligations under the FERC directive is not complete. The survey only addresses the first two questions from FERC: specific ways in which entities determine which Cyber Assets meet the 15 minute parameter and types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets.

Recommendation 10: Entity recommends clarifying the survey responses will only meet part of the NERC Directive. NERC will have to respond to the remaining questions through another means.

Narrative 11: NERC states the data or information collected will be validated by:
- Identifying Registered Entities applicable to CIP Version 5
- Instructing the entities on how to respond to the survey
- Collecting and sorting the data
- Comparing a list of Registered Entities with the respondents to ensure the responses are received as request.
NERC will further validate the data provided.

The steps above only state how NERC will ensure appropriate entities responded but do not clearly define how NERC will validate the actual data provided. The statement, "NERC will further validate the data provided" is ambiguous.

**Recommendation 11:** Entity recommends clearly describing how the actual data will be validated to comply with NERC RoP Section 1600.

**Narrative 12:** Entities required to respond to the survey includes Distribution Providers (as described in the applicability section of 4.1.2 or CIP-003-5. Was the intent to reference CIP-003-5 or CIP-002-5? Does NERC have a list of entities that meet that criteria? It will be difficult to ensure all Registered Entities required to respond have completed the survey without a list of Distribution Providers meeting the criteria.

**Recommendation 12:** Entity recommends removing DP’s from the list of entities that are required to respond or ensuring a list of DP’s meeting that criterion is available.

**Narrative 13:** The proposed NERC response time is 70 days from issuance with anticipated NERC Board of Trustees approval August 13-14, 2014. Assuming it would be released August 15, this would make a response due by October 24, 2014. The response time will not allow entities sufficient time to accurately gather the magnitude of data required in this data request.

**Recommendation 13:** Entity recommends NERC extend the amount of time allotted for entities to respond or reduce the magnitude of the data required by excluding Low cyber assets. Alternatively, NERC can consider issuing the survey in phases with the first phase allowing a broad estimation with a second phase requested more specific data closer to the effective date of NERC CIP Version 5.

**Narrative 14:** NERC estimates the burden to be ‘minimal’ estimating 40 hours for a ‘small’ entity and less than 100 hours for a ‘larger’ entity. While it is expected entities are starting to transition to CIP Version 5, entities are still in the process of developing procedures and have not been required to inventory Cyber Assets at Low BES facilities or non-BES Cyber Assets. To do an accurate inventory at Low facilities will be much more time consuming than the NERC estimate; especially considering Low BES Generation facilities.

**Recommendation 14:** Entity recommends NERC substantiate the estimated hours.

**Information Required by ROP Section 1602.2**

**Narrative 15:** The explanation and functional uses of asset types does not clearly delineate corporate business functional assets (corporate IT infrastructure) from BES Cyber Assets.

**Recommendation 15:** Entity requests that NERC clarify that the survey does not include assets used for Information Technology (IT) support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.

**Narrative 16:** See Definition of "Historian" (p. 29, 31, 32): Entity believes that historians are used for recording after-the-fact data this can be used for engineering analysis. Entity believes that historians have no ability to affect the operation of the BES. [note some entities use historians for real-time planning and operations – this recommendation may not be applicable]

**Recommendation 16:** Entity recommends that NERC remove them from the scope of the survey.

**Narrative 17:** See Definition of “Physical Access Control Systems” (p.29, 31, 33): Registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. Entity does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the Bulk Electric System.

**Recommendation 17:** Entity recommends that NERC remove them from the scope of the survey. If Physical Access Control Systems are not removed from the survey, Entity requests that NERC clarify
that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.

**Narrative 18:** See Definition of “Locally Mounted Physical Security Device” (p.30, 31, 33): Entity does not believe that Locally Mounted Physical Security Devices should be included within the survey because they do not affect reliable operation of the Bulk Electric System. Entity believes that Locally Mounted Physical Security Devices have no potential to impact the BES because they are typically serial devices with little or no cyber capability.

**Recommendation 18:** Entity recommends that NERC remove them from the scope of the survey. If Locally Mounted Physical Security Devices are not removed from the survey, entity requests that NERC clarify that only Locally Mounted Physical Security Devices protecting Physical Security Perimeters (PSPs) are included in the survey.

**Narrative 19:** See Definition of “Sensor / Actuator / Transmitter” (p.32): Entity is concerned about the possible scope of the proposed definition because an individual generating unit could possibly have hundreds of sensors, actuators, and transmitters. In general entity believes that these devices have little or no cyber capability and therefore no potential to impact the BES from a cyber perspective. Entity believes that this component of the request could be very onerous for generation facilities, and would not provide valuable information because of the many types of devices included in the category.

**Recommendation 19:** Entity requests that NERC remove the “Sensor / Actuator / Transmitter” category from the scope of the request. If NERC does not remove the category, Entity requests that NERC narrow the category and suggests that this may yield more meaningful information.

**Recommendation 20:** See Definition of “IED/Relay” (p. 33): Entity requests that NERC remove relay devices that are isolated and use serial interfaces from the scope of the survey because they have no potential impact on the BES from a cyber perspective.

**Narrative 21:** [Reference BES Cyber Asset Survey FAQ sent July 7, 2014 Q1] “NERC is requesting this information in order to meet the Commission’s directive in Order No. 791. In Order No. 791, FERC directed NERC to conduct a survey of Cyber Assets included or excluded from the definition of BES Cyber Asset. FERC also instructed NERC to address certain issues in an informational filing, due February 3, 2015, based on the survey results. **To comply with FERC’s directives, NERC needs the level of detail requested in the survey** in order to provide meaningful analysis as part of its informational filing to FERC. (Emphasis Added)” Entity disagrees the level requested in the survey is directed in the FERC Order No. 790. Entity notes FERC Order No. 791 specifically states NERC explain the types or functions of Cyber Assets that are excluded from being designates as BES Cyber Assets and the rationale as to why.

**Recommendation 21:** Entity recommends NERC modify the survey request to require only types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets for Low impact BES Cyber Systems.
Comments of
Bureau of Reclamation
United States Department of the Interior
BUREAU OF RECLAMATION
P.O. Box 25007
Denver, CO 80225-0007
JUL 14 2014

IN REPLY REFER TO:

86-51000
PRJ-17.00

VIA ELECTRONIC MAIL ONLY

Gary Cauley, P.E.
President and Chief Executive Officer
North American Electric Reliability Corporation
3353 Peachtree Road, NE
Suite 600 North Tower
Atlanta, GA 30326

Subject: Bureau of Reclamation Comments on BES Cyber Asset Survey

Reclamation appreciates the opportunity to comment on the North American Electric Reliability Corporation (NERC)’s Proposed Request for Data or Information – Survey Regarding the Scope of the Term “BES Cyber Asset,” dated May 30, 2014. Reclamation is the second largest producer of hydroelectric power in the western United States. Reclamation owns and operates 53 powerplants that annually produce more than 40 billion kilowatt hours of electricity, enough to meet the demand of 3.5 million homes.

Reclamation submits the following comments on the proposed survey:

1. **General Comment:** Reclamation believes that the survey places a large burden on the entities that must develop inventories and respond to this request. Reclamation notes that Order 791 did not require NERC to survey all registered entities. Reclamation recommends that NERC reduce the burden on registered entities by proposing to survey either a sampling of entities across the BES, or request that entities send data from a sample facility, or request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions.

2. **See “Proposed Data Request,” paragraph 2 (p. 9):** Reclamation observes that the request requires a list of types and number of cyber assets that are included or excluded from the definition of a Bulk Electric System (BES) cyber asset. However, CIP-002-5 does not require an inventory of BES cyber systems for low impact facilities. Therefore, Reclamation believes that the survey should not require entities to inventory cyber assets at low impact facilities.

See “Information Required by ROP Section 1602.2,” section 1.b. (p. 25): The last sentence states, “NERC will also use information learned from the Transition Study for
the information filing.” Reclamation requests that NERC provide a date when the results of the Transition Study will be published. Reclamation hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

In addition, the second sentence states, "the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards ..." Reclamation requests that NERC include the implementation period timeline in the explanation.

3. **See “Information Required by ROP Section 1602.2,” section 6. (p. 26):** This section states that “for larger entities, the estimated time to complete the Data Request is estimated at less than 100 hours total per entity.” Reclamation believes that a large entity may require far more than 100 hours to complete the survey. Reclamation estimates that inventorying many facilities and coordinating survey results could require as much as 500 staff hours.

4. **See “Explanation of Functional Uses of Asset Types” (p. 28):** Reclamation requests that NERC clarify that the survey does not include assets used for Information Technology support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.

5. **See Definition of “Historian” (p. 29, 31, 32):** Reclamation believes that historians are used for recording after-the-fact data that can be used for engineering analysis. Reclamation believes that historians have no ability to affect the operation of the BES, and requests that NERC remove them from the scope of the survey.

6. **See Definition of “Physical Access Control Systems” (p.29, 31 33):** Reclamation does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the BES. In addition, registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. If Physical Access Control Systems are not removed from the survey, Reclamation requests that NERC clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.

7. **See Definition of “Locally Mounted Physical Security Device” (p.30, 31, 33):** Reclamation does not believe that Locally Mounted Physical Security Devices should be included within the survey because they do not affect reliable operation of the BES. Reclamation believes that Locally Mounted Physical Security Devices have no potential to impact the BES because they are typically serial devices with little or no cyber capability. If Locally Mounted Physical Security Devices are not removed from the survey, Reclamation requests that NERC clarify that only Locally Mounted Physical Security Devices protecting PSPs are included in the survey.
8. See Definition of “Sensor/Actuator/Transmitter” (p.32): Reclamation is concerned about the possible scope of the proposed definition because an individual generating unit could have hundreds of sensors, actuators, and transmitters. In general, Reclamation believes that these devices have little or no cyber capability and therefore no potential to impact the BES from a cyber perspective. Reclamation believes that this component of the request could be very onerous for generation facilities, and would not provide valuable information because of the many types of devices included in the category. Reclamation requests that NERC remove the “Sensor/Actuator/Transmitter” category from the scope of the request. If NERC does not remove the category, Reclamation requests that NERC narrow the category and suggests that this may yield more meaningful information.

Reclamation supports NERC’s efforts to increase bulk electric system security, and believes that a more focused survey will produce more valuable information on the implementation of CIP Version 5. Thank you for considering our comments.

Max Spiker  
Acting Senior Advisor, Hydropower  
Electric Reliability Compliance Officer
Comments of PHI
Comments of Pepco Holdings Inc.

On May 30, 2014 the North American Reliability Corporation (NERC) requested public comments on its proposed request for data or information regarding the Scope of the Term “BES Cyber Asset.” Pepco Holdings, Inc. (“PHI”) and its jurisdictional subsidiaries, Potomac Electric Power Company (“Pepco”), Delmarva Power & Light Company (“Delmarva”), Atlantic City Electric Company (“Atlantic City”), (collectively referred to as the “PHI Companies”), hereby submit these Comments in response to the request. The PHI Companies are each regulated transmission and distribution utilities, and, together, provide transmission and distribution services to over 1.8 million retail customers in the Mid-Atlantic region, including the nation’s capital. Additionally, the Edison Electric Institute (EEI) submitted comments on the behalf of members, on the NERC Survey.

The PHI Companies support the comments submitted by EEI. Though not wishing to repeat the comments presented by the EEI, the PHI Companies reiterate the concerns with the proposed survey and consideration of an alternate approach to address FERC’s directive.

Key concerns as stated in the EEI comments with the proposed survey include 1) the scope of the proposed survey is not needed to respond to FERC’s directive, 2) the survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden to entities, and 3) the survey itself is unclear, which will increase the burden and make it difficult for NERC to respond to the FERC. The scope and burden of the proposed survey will also not help “other entities implementing CIP V5 in identifying BES Cyber Assets” as FERC intended. Instead, the proposed survey will harm entities by requiring them to pull resources devoted to implementing CIP V5 to complete the proposed survey.

As an alternate approach, as proposed in the EEI comments, NERC should use the V5 Transition Plan pilot program participants to answer FERC’s questions (as addressed in Order 791 and 791A), follow up with the program participants to validate their responses, and share with Registered Entities to gather additional feedback, including different approaches or concerns. This alternative approach will significantly reduce the burden to responsible registered entities and NERC itself, allow entities to focus on the actual implementation of CIP V5 and will also provide a more useful tool to help the FERC, registered entities, and regional entities better understand the BES Cyber Asset definition.

PHI agrees with the FERC’s suggestion and strongly recommends that NERC follow FERC’s example and start with the pilot participants to explain:

1. specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;
2. types of functions of Cyber Assets that meet the 15 minute parameter;
3. common problem areas with entities improperly designating BES Cyber Assets; and
4. feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.

In conclusion, PHI strongly agrees EEI’s proposed approach and encourages that NERC consider EEI’s proposal.
Comments of
MidAmerican
Comments on the Proposed BES Cyber Asset Survey

Comments

We appreciate NERC providing this opportunity to comment and respectfully ask consideration of Edison Electric Institute’s and MidAmerican Energy Company’s comments and recommendations.

MidAmerican Energy Company supports industry comments submitted by the Edison Electric Institute (EEI) regarding the proposed BES Cyber Asset Survey.

Please consider FERC’s clarification in Order 791-A, where the Commission said:

“We clarify that Order No. 791 did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter. Instead the scope of the survey was left for NERC to determine. Order No. 791 intended that NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 in the required NERC informational filing. For example, NERC could use the participants in the pilot program, discussed above, as the basis for the survey.”

If NERC chooses to use participants from the pilot program as the basis for the survey as suggested by FERC, the survey should be qualitative and not quantitative as noted in EEI’s recommendations. As a participant, MidAmerican Energy Company is willing to work with other participants, other companies, regions and NERC to provide meaningful qualitative information in response to FERC.

Submitted by

MidAmerican Energy Company
Annette Johnston
Primary Compliance Contact
July 14, 2014
Comments of
LPPP
July 14, 2014

Subject: Comments on Proposed Request for Data or Information Survey Regarding “BES Cyber Asset.”

The Lucky Peak Power Plant Project (LPPP) is owned by four irrigation districts. The Boise-Kuna Irrigation District (BKID) represents all the districts on matters of reliability. BKID is registered with NERC as a Generator Owner. LPPP is the only BES Facility owned by BKID (and the other districts). LPPP located at a US Army Corps of Engineers (USACE) Dam. Our FERC License requires that we release the amount of water ordered by the USACE. The facility has a name plate capacity of 101 MW which is reached only in the wettest years during flood control operations when the Pacific Northwest has a glut of available energy. From late October until early March, except during the wettest years, generation is two (2) MW. During that time, the remaining 99 MW is unavailable even if needed. While LPPP has the lowest of the “Low” (insignificant) impact on the BES, we will be required to respond to the BES Asset Survey.

BKID concurs with the comments submitted to NERC by various members of WICF, those of a Working Group of the NAGF, and other industry groups that the survey goes beyond the directives of FERC’s request, is inconsistent with the timing allowed by CIP-002-5.1 to perform implementation work, is lacking in clarity, underestimates the resources required and is overly burdensome. While the number of Cyber Assets to be listed is relative to size, LPPP also contends that Part 2 of the Data Request is especially demanding on those entities that are on the lowest range of “Low,” the “Insignificant” Entities. Development and describing the process an entity uses or will use to determine if a particular Cyber Asset is categorized as BES Cyber Asset requires the same amount of time whether the entity has one or one-thousand such Cyber Assets. “Insignificant” Entities often do not have the in-house expertise to develop such a program would have to hire a vendor plus provide the vendor with someone who is familiar with their Cyber Assets.

NERC should strongly consider an alternative approach to address the directives of FERC mentioned in Order No. 791. A suggested alternative to a Section 1600 Data Request would be for NERC to work with the participants of the pilot program to gather the information for the filing in accordance with the Commission’s suggestion in Order 791-A. Only in the circumstance that the information obtained by working with the pilot program participants is determined to be deficient to meet FERC’s directive should a broader data collection be considered. Even in that circumstance alternatives should be considered prior to consideration of a Section 1600 Data Request that requires participation from all Register Entities including those who have an insignificant impact on the BES. In addition, the pilot program and NERC staff needs to consider input from “Insignificant” entities.
Respectfully,

Thomas Nelson
Generation Supervisor
Lucky Peak Power Plant Project
Tom@luckypeakpower.org
(208) 344-2845
Comments of

WAPA
Comments to BES Cyber Asset Survey

A1. NERC Standard CIP-002-5 R1 requires responsible entities to identify their BES Cyber Systems.
A2. The FERC final rule which approved the version 5 CIP reliability standards established April 01, 2016 as the date by which responsible entities must comply with CIP-002-5 R1.
A3. The proposed data request is asking responsible entities to provide substantially the same formation as NERC Standard CIP-002-5 R1.
A4. The proposed data request is asking that this information be delivered by October 22-23, 2014. (August 13-14, 2014 plus 70 days.) Therefore, the proposed data request effectively moves compliance with CIP-002-5 R1 forward by 17 months.

B1. NERC Standard CIP-002-5 R1.3 states, “…..a discrete list of low impact BES cyber Systems is not required…..”.
B2. In order to answer the proposed data request, responsible entities will need to develop a list of cyber assets at low impact facilities. Therefore, the proposed data request imposes a greater burden than what is required by CIP-002-5 R1.3.
The Western Area Power Administration appreciates the opportunity to comment on the proposed BES Cyber Asset Survey

1. CIP-002-5 R1 requires each responsible entity to identify their High, Medium, and Low Impact Cyber System based on the guidance provided in CIP-002-5 Attachment 1. The FERC final rule which approved Version 5 of the CIP Standards established April 1, 2016 as the date by which a significant number of CIP Version 5 Requirements become mandatory and enforceable, including CIP-002-5 R1. The proposed survey is requesting responsible entities to provide an estimated number of BES Cyber Assets and non BES Cyber Asset utilizing established ranges provided in the survey for its High, Medium, and Low Impact Cyber Systems. In order for the responsible entity to provide data to NERC as part of this survey, entities are essentially tasked to perform the same analysis for its High, Medium, and Low Impact Systems to meet the requirements of CIP-002-5 R1. The proposed data request is asking for the information to be furnished to NERC by October 23, 2014 (August 13, 2014 plus 70 days) which is effectively requiring responsible entities to be substantially compliant with CIP-002-5 R1 approximately 17 months prior to the actual enforcement date of the Standard.

2. As provided in the NERC BES Cyber Asset Survey FAQs, “neither the CIP Version 5 Reliability Standards nor the survey require entities to have an inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets.” However, in order to respond to the data request, responsible entities will need to complete at the very least a cursory evaluation of cyber assets at all low impact facilities. Western has well over 100 Low Impact Cyber Systems that would need to be studied within the proposed time frame provided for this data request which we feel will be labor intensive, burdensome and will adversely affect our current preparations we are making for Version 5.

3. The proposed survey lists requirements and parameters for systems and devices which are not considered BES Cyber Systems or have no impact on the BES operation. For example - Physical Access Control Systems, Locally Mounted Physical Security, Network Printer, assets used for Information Technology (IT) support etc. are non-BES Cyber Systems. We recommend clarifying the survey requirement and the attachments such that an entity provide feedback on the types of cyber assets that should be excluded from being designated as BES Cyber Systems and why, in lieu of requiring entities to perform an inventory of their respective Low Impact Cyber Systems.

4. The explanation and functional uses of asset types does not clearly delineate corporate business functional assets (corporate IT infrastructure) from BES Cyber Assets. We would recommend that NERC clarify that the survey does not include assets used for Information Technology (IT) support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.

The anticipated burden in completing this survey will be dependent upon the size of the each responsible entity and the extent of the entities Bulk Electric System Cyber Assets, Systems and locations, as well as the maturity of their processes for identifying and classifying Cyber Assets. Entities are in the midst of transitioning from Version 3 to Version 5 and completion of this data request will affect entities efforts to meet compliance with Version 5 by April 2016. We believe the requirements to assess and classify Cyber Assets in and out of scope will be high. Western
recommends changing the scope of the survey and better clarifying the terminology and parameters.
Comments of
EDP
Comments to BES Cyber Asset Survey

The following are comments to the 5/30/2014 BES Cyber Asset Survey:

- As a general thought, a survey that is 40 pages long is probably too long.
- The level of detail requested for High/Medium Impact items in the tables is probably consistent with their associated inventory list developed for determination of BES Cyber Systems; however, asking for the same level of detail for Low Impact items in the tables is not consistent with CIP-003-5, R2 indicating no detail inventory list is required. Suggest deleting tables for Lows from the survey.
- In the tables there are columns labeled “Type of Cyber Asset” and “Number of Cyber Assets at Each.....” It seems as though “BES” needs to be in the headings after the word “Cyber”.
- The table asks for information on BES Cyber Assets. Should PAC’s, EACM’s, PCA’s, and EAP’s be considered.
- There are types of Cyber Assets listed in each Table. There could be issues with entities calling their assets by a different name thus not able to match up apples to apples and making data misleading.
Comments of Dominion
 Dominion comments

**Title;** NERC request for Public Comment on FERC Order No. 791 Survey
This Data Request is being presented for comment in response to FERC Order No. 791, in which FERC directed NERC to conduct a survey of responsible entities during the CIP version 5 Standards implementation periods to determine the number of assets, by type, that fall outside the definition of BES Cyber Asset.

**Due Date;** July 14, 2014 submit electronically to; BESCyberAssetSurvey@nerc.net

**Dominion comments:**

1. Is 70 days appropriate to complete the survey?
   
   a. Due to the inclusion of Cyber Assets that are not BES Cyber Assets at Low Impact Facilities 70 days would not allow enough time to complete the survey.

2. Please describe any additional equipment types that should be included in the tables in Part 1 of the Data Request.
   
   • The tables provide an “Other” category for Registered Entities to provide Cyber Asset types that do not fit the generic list.

3. Are the ranges for numbers of Cyber Assets provided in the tables in Part 1 of the Data Requests appropriate to capture useable data from the survey?

4. Page 9; Is the data request to be filled out per Registered Entity or per Company? Please provide clarity.

5. Page 10 1.b; Request that Primary, Backup, and associated Data Centers be allowed to be combined on one set of tables.

6. Page 12 (et. al.); Locally Mounted Physical Security devices are excluded from the definition of PACS and are not BESCA, why is information being collected for them? Request that this line be removed from all applicable tables.

7. Page 13 1.c (et. al.); Is there an expectation of a response for every item/category with a response in the previous table? If so, the table should
be modified to put the counts in one column (from a pull down) and use the remaining space for a REASON column.

8. Page 14 2.b; A separate form for each medium substation is excessive. Request that you allow an average or total counts (similar to the Low Impact) for the table or change the request to enter the “number of substations” instead of “x” in the count columns.

9. Page14 2.b; Inventories have not been made at all Low Impact substations and may not have been made at all Medium Impact substations. Counts will be estimates.

10. Page 14; Make the page break so that Intelligent Instrumentation is in the same box.

11. Comments 6 & 7 above apply to Sections 2 and 3, also.

12. Page 21; Performing counts of Cyber Assets at Generation Plants that are not BES Cyber Assets at Low Impact Facilities will be time consuming diverting resources from implementation tasks associated with V5 without adding any real benefit.
Comments of
Duke
Date: July 14, 2014

Subject: BES Cyber Asset Survey

Duke Energy appreciates the opportunity to provide comments on the abovementioned survey. Our comments on the proposed are as follows:

Survey Scope:
It is our understanding, that the survey is essentially asking for a discrete inventory of all Generation facilities, all Control Centers, all medium impact Transmission substations, and a summation of all low impact Transmission substations. Requesting data on low impact BES Cyber Assets appears to be a direct departure from what the Commission indicated in Order No. 791, wherein it stated that compiling data on low impact Assets would be “unduly burdensome.” Aside from the apparent contradiction to the FERC Order, we agree with other industry stakeholders who assert that counting low impact Cyber Assets or Systems is particularly concerning as CIP 003 Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” As indicated above, the counting of low impact Cyber Assets is not required by CIP Version 5, but will be required by the proposed data request if not appropriately revised. In the recent FAQ posted by NERC, they indicate that an inventory is not required as well. However, Duke Energy fails to understand how the information requested in the survey can be provided without going through the process of performing an inventory. Without doing so the information provided by Registered Entities will be wildly inaccurate and provide no value to the analysis NERC is attempting to perform in order to respond to the Commission.

Also requested, is information on a wide variety of devices, such as Network Printers, Fault Recorders, and Historians which we argue have no cyber security impact to BES reliability or have nothing to do with reliable operations. The request should only be limited to such devices that have a material impact on the reliability of the BES, and as such, would reduce the burden associated with replying.

Timeline for Submittal:
Regarding the timeframe for submittal, we feel that 70 days to provide the amount of data in the format requested is unreasonable. Submitting responses for the survey as currently written basically requires an entity to comply with CIP-002-5.1 earlier than the approved effective date, by performing asset inventories and classifications within 70-days after the posting of the survey. We feel that this would be unduly burdensome and inconsistent with the amount of time allotted within the effective implementation plan for CIP Version 5.

Also, entities will need to utilize significant resources to respond to this request, resources that are currently continuing to work to understand and implement the NERC CIP Version 5 Standards by the required effective date(s). Providing the detail requested in this short time frame will only further distract those resources from securing the grid by successful implementation of the Standards. The survey indicates that the expected time to reply to the survey is 40 hours for small entities, and no more than 100 hours for larger entities. In our estimation, this projection fails to fully recognize the amount of information that is being
requested, the format in which it is to be provided, and the amount of drawings and inventories that must be reviewed and dissected.

In summation, we view this request as proposed to be overly burdensome on the industry, and is far more than what is required to respond to the Commission's directive in Order No. 791. Duke Energy recommends that NERC utilize the recommendation made by the Commission in Order No. 791-A wherein it was suggested that NERC enlist the assistance of the pilot program participants in gathering the information sought after.

Respectfully submitted,
Colby B. Bellville
Reliability Standards Development
Duke Energy Corporation
Comments of

RCEC
Public Comment on Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”

I. Control Centers:
   a. Please specify the total number of Control Centers you own or operate: 0

II. Transmission Station / Substation:
   a. Please specify the total number of transmission stations and substations you own or operate:
      Our facilities fall into the classification of distribution serving end use load only, the facilities consist of 83 Non-BES stations and/or substations within 2 regions.
   b. If the total number of transmission stations and substations you own or operate identified above does not equal the sum of Medium and Low Impact transmission stations and substations identified in parts i and ii, please explain why:
      There was no qualifier as to the status of the station / substation, if it was BES or not.
   c. Please describe the functions performed by the Cyber Assets that do not meet the 15-minute impact threshold, and the rationale for not including them.
      Cyber Assets within our Non-BES substations are used for metering, and protective functions.
      - Metering is, only used for member / customer billing not for BES operation that function is performed by our host utility.
      - Protective functions only operate/protect only non BES equipment.
      - Other cyber assets perform communications functions for the items above.

III. Generation Plants:
   a. Please specify the total number of generation plants you own or operate: 0

IV. Other Locations:
   a. If you have any other Cyber Assets that control BES Elements outside of Control Centers, transmission stations or substations, and generation plants, please describe their location and function, and explain whether they meet the definition of BES Cyber Asset.
      NONE
      - Part 2 – Please describe the process you are using or will use to determine if a particular Cyber Asset meets the definition of BES Cyber Asset. Please also describe any challenges you have encountered while creating or executing your process.
      Applicability will exclude all of our facilities and systems.
      - Which systems or network components associated with BES Cyber Systems would not be considered in scope of the CIP standards? Are these systems considered programmable? If not, what are their characteristics? NA
      - How would you define programmable electronic device?
        Any device whose operation is controlled by a stored program that can be changed or replaced.
Comments of
FEUS
Date: July 8, 2014

Subject: Request for Public Comment: Survey Regarding the Scope and Term of “BES Cyber Asset.”

Farmington Electric Utility System (FEUS) is a NERC registered entity and will be required to respond to the BES Cyber Asset Survey. FEUS has significant concerns about the time and resources it will take to complete the survey as drafted. We appreciate NERC taking into consideration FEUS’ comments and recommendations.

In general, FEUS recommends removing Low’s from the survey. The CIP-002-5 does not require a list of Low assets; however, this survey would require an inventory be conducted. This would be extremely burdensome regardless of the size of the entity and especially difficult for Low generation facilities. It’s estimated it will take 2-3 days for a small transmission substation and several weeks for a generation facility.

Additionally, FEUS disagrees that NERC has fulfilled its obligations under Section 1600 by failing to adequately address the information required by Section 1602.2. Notably, NERC neglects to state how the data will be validated only stating how they will validate which entities have responded. Furthermore, NERC estimates the burden to be ‘minimal, approximately 40 hours total for small entities and less than 100 hours for larger entities.’ FEUS requests NERC substantiate how the estimated hours were calculated.

More detailed comments are attached.

Respectfully;

Linda Jacobson-Quinn  
Regulatory Compliance Manager  
Farmington Electric Utility System (NCR05155)  
ljacobson@fmtn.org  
505-599-1163
FEUS, through a coordinated effort of the Western Interconnection Compliance Forum (WICF), developed a number of comments and recommendations. FEUS deems the following narratives are legitimate arguments, provide constructive feedback and offer alternative recommendations for NERC’s considerations.

Narrative 1: The survey proposed, meets the initial request in paragraph 124 to create a list of cyber assets that are included or excluded. However, simply creating a list of the number of assets that are in or out does not provide the data necessary to answer the underlying questions posed by FERC.

Recommendation 1: We would suggest that it would be a more appropriate approach to survey the systems that are included or excluded based on the 15-minute criteria. The assets themselves are determined by evaluating the BROS. It is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint.

A secondary benefit of a systems based approach, as suggested above, would be that industry may be able to provide this information to NERC sooner than a count of the actual number of devices.

Narrative 2: While the survey aligns somewhat with CIP-002-5 processes, because the Version 5 processes are in draft form and function, attempting to use them early will produce specious results.

Recommendation 2: This entity recommends such a survey occur after the related CIP Version 5 processes for identifying and classifying BES Cyber Assets, Systems and sites or locations is completed and validated. As mentioned above, Entities will be able to more accurately assess BES Cyber Assets and provide NERC with more valuable information about the process, impact and function.

Narrative 3: The survey scope requires labor intensive tasks in order to assess, tabulate and differentiate all Cyber Assets, their related Systems and locations, both in scope and not in scope. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets than required alone by CIP Version 5. For example, Version 5 does not require a list, whereas this survey requires the development of a list.

And Low Impact Generation plants for example may contain thousands of specialized Cyber Assets. In this regard, not only would Entities be required to develop new and untested Low Impact or No Impact assessment processes, but they would also need to shift or add qualified staff in order to assess the large numbers associated with the survey requirements.

Working with untested and immature processes, and shifting resources during the Version 5 transition work, will result in questionable survey results.

Recommendation 3: Entity recommends a survey based on risk and associated with High and Medium Impact BES Cyber Assets and their related Systems and sites/locations. The survey could also implement a sampling of Low Impact Cyber Assets and their associated Systems or locations but should not require a full inventory.

Narrative 4: The NERC survey and Attachment 1 document lists survey requirements and parameters for devices and systems which are not considered BES Cyber Systems. “Physical Access
Control System,” “Locally Mounted Physical Security,” “Network Printer,” etc., for example are non-BES Cyber Systems and are inherently considered to be a class in themselves outside of BES Cyber Assets, i.e., PACS. Part 2 also questions the processes used to determine BES Cyber Assets.

**Recommendation 4:** Entity recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems. Entity also recommends seeking further comments regarding Entities processes for determination or to request information to ascertain the recommended Entity methodologies and use those as basis in a guidance document.

**Narrative 5:** See “Information Required by ROP Section 1602.2,” section b. (p. 25): The second sentence states, "the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards ... ."

The last sentence states, "NERC will also use information learned from the Transition Study for the information filing." Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

**Recommendation 5:** Entity requests that NERC include the implementation period timeline in the explanation. Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

**Narrative 6:** NERC states the data or information collected will be validated by:

- Identifying Registered Entities applicable to CIP Version 5
- Instructing the entities on how to respond to the survey
- Collecting and sorting the data
- Comparing a list of Registered Entities with the respondents to ensure the responses are received as request.
- NERC will further validate the data provided.

The steps above only state how NERC will ensure appropriate entities responded but do not clearly define how NERC will validate the actual data provided. The statement, “NERC will further validate the data provided” is ambiguous.

**Recommendation 6:** Entity recommends clearly describing how the actual data will be validated to comply with NERC RoP Section 1600.

**Narrative 7:** Entities required to respond to the survey includes Distribution Providers (as described in the applicability section of 4.1.2 or CIP-003-5. Was the intent to reference CIP-003-5 or CIP-002-5? Does NERC have a list of entities that meet that criteria? It will be difficult to ensure all Registered Entities required to respond have completed the survey without a list of Distribution Providers meeting the criteria.

**Recommendation 7:** Entity recommends removing DP’s from the list of entities that are required to respond or ensuring a list of DP’s meeting that criterion is available.
**Narrative 8:** The proposed NERC response time is 70 days from issuance with anticipated NERC Board of Trustees approval August 13-14, 2014. Assuming it would be released August 15, this would make a response due by October 24, 2014. The response time will not allow entities sufficient time to accurately gather the magnitude of data required in this data request.

**Recommendation 8:** Entity recommends NERC extend the amount of time allotted for entities to respond or reduce the magnitude of the data required by excluding Low cyber assets. Alternatively, NERC can consider issuing the survey in phases with the first phase allowing a broad estimation with a second phase requested more specific data closer to the effective date of NERC CIP Version 5.

**Narrative 9:** NERC estimates the burden to be ‘minimal’ estimating 40 hours for a ‘small’ entity and less than 100 hours for a ‘larger’ entity. While it is expected entities are starting to transition to CIP Version 5, entities are still in the process of developing procedures and have not been required to inventory Cyber Assets at Low BES facilities or non-BES Cyber Assets. To do an accurate inventory at Low facilities will be much more time consuming than the NERC estimate; especially considering Low BES Generation facilities.

**Recommendation 9:** Entity recommends NERC substantiate the estimated hours.

**Narrative 10:** The explanation and functional uses of asset types does not clearly delineate corporate business functional assets (corporate IT infrastructure) from BES Cyber Assets.

**Recommendation 10:** Entity requests that NERC clarify that the survey does not include assets used for Information Technology (IT) support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.

**Narrative 11:** See Definition of “Physical Access Control Systems” (p.29, 31 33): Registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. Entity does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the Bulk Electric System.

**Recommendation 11:** Entity requests that NERC clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.

**Narrative 12:** See Definition of “Locally Mounted Physical Security Device” (p.30, 31, 33): Entity does not believe that Locally Mounted Physical Security Devices should be included within the survey because they do not affect reliable operation of the Bulk Electric System. Entity believes that Locally Mounted Physical Security Devices have no potential to impact the BES because they are typically serial devices with little or no cyber capability.

**Recommendation 12:** Entity recommends that NERC remove them from the scope of the survey. If Locally Mounted Physical Security Devices are not removed from the survey, entity requests that NERC clarify that only Locally Mounted Physical Security Devices protecting Physical Security Perimeters (PSPs) are included in the survey.
Narrative 13: See Definition of "Sensor / Actuator / Transmitter" (p.32): Entity is concerned about the possible scope of the proposed definition because an individual generating unit could possibly have hundreds of sensors, actuators, and transmitters. In general, entity believes that these devices have little or no cyber capability and therefore no potential to impact the BES from a cyber perspective. Entity believes that this component of the request could be very onerous for generation facilities, and would not provide valuable information because of the many types of devices included in the category.

Recommendation 13: Entity requests that NERC remove the “Sensor / Actuator / Transmitter” category from the scope of the request. If NERC does not remove the category, Entity requests that NERC narrow the category and suggests that this may yield more meaningful information.

Narrative 14: [Reference BES Cyber Asset Survey FAQ sent July 7, 2014 Q1] “NERC is requesting this information in order to meet the Commission’s directive in Order No. 791. In Order No. 791, FERC directed NERC to conduct a survey of Cyber Assets included or excluded from the definition of BES Cyber Asset. FERC also instructed NERC to address certain issues in an informational filing, due February 3, 2015, based on the survey results. To comply with FERC’s directives, NERC needs the level of detail requested in the survey in order to provide meaningful analysis as part of its informational filing to FERC. (Emphasis Added)” Entity disagrees the level requested in the survey is directed in the FERC Order No. 790. Entity notes FERC Order No. 791 specifically states NERC explain the types or functions of Cyber Assets that are excluded from being designates as BES Cyber Assets and the rationale as to why.

Recommendation 14: Entity recommends NERC modify the survey request to require only types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets for Low impact BES Cyber Systems.
Comments of
IID
Data Request Type: NERC BES Cyber Asset Survey  
Issue Date: 5/30/2014  
Due Date: 7/14/2014  
Requester: NERC

Data Request Description:

The North American Electric Reliability Corporation (“NERC”) requests public comment by 8:00 p.m. EST, July 14, 2014 on its proposal to collect data (the “Data Request”) pursuant to Section 1600 of the NERC Rules of Procedure (“ROP”)1 regarding the scope of the term “BES Cyber Asset,” as defined in NERC’s Glossary of Terms Used in NERC Reliability Standards (“NERC Glossary”). Comments must be submitted in an electronic document to BESCyberAssetSurvey@nerc.net.

IID Response:

It not clear what is the complete purpose of the survey and the meaning of the data being collected. The survey itself goes beyond what is required by FERC in order 791 paragraph 124. The survey should focus on the requirements of NERC from the order, otherwise the purpose and use of the data is unclear.

The survey concentrates on specific cyber asset types. The types of assets do not seem to reflect those that may be BES Cyber Assets if networks are segregated appropriately -- network printers for example. Inclusion in the list seems to imply that we would have to have a reason to exclude these devices from a list of BES assets rather than having a reason to include them. Since the standard requires a focus on BES Cyber Systems, focusing the survey on individual assets would lead to inconsistent results based on the level of the current program at individual entities.

The FAQ for the survey says that Low Impact BES cyber systems do not need to be inventoried and therefore estimates of the numbers if cyber assets can be made. We believe that the questions for Low impact cyber assets should be dropped. The allowance of estimates will make the results of doubtful quality in any case.

We have defined processes and can answer questions about these processes in the survey. We believe the requirement of identifying down to the cyber assets level in categories that may not be consistent with our inventory methodology or the methodology of other entities will limit the usefulness of the data and may cause misleading conclusions.
Date Submitted: 7/14/2014
Submitted By: Natalia F. Herrera
Compliance Administrator
Imperial Irrigation District
Direct Line: (760) 339 0821
Cell Phone: (760) 604 2183
E-mail: nfherrera@iid.com
Comments of
LPPC
These comments are being submitted on behalf of the Large Public Power Council (LPPC).1

**Overview Summary**

The purpose of the survey and data request is to determine the scope and reach of the term “BES Cyber Asset” (BCA). The survey will also provide guidance for the industry in determining BES Cyber Assets. The results of the survey would provide data to allow NERC to answer the following FERC questions:

1. Specific ways in which entities determine which Cyber Assets meet the 15-minute parameter;
2. Types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why;
3. Common problem areas with entities improperly designating BES Cyber Assets; and
4. Feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.

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1 LPPC represents 26 of the largest state and municipal utilities in the nation, with members that own approximately 90% of the transmission investment owned by non-federal public power in the nation. LPPC’s members include Austin Energy, Chelan County Public Utility District No. 1, Clark Public Utilities, Colorado Springs Utilities, CPS Energy (San Antonio), ElectriCities of North Carolina, Grand River Dam Authority, Grant County Public Utility District, IID Energy (Imperial Irrigation District), JEA (Jacksonville, FL), Long Island Power Authority, Los Angeles Department of Water and Power, Lower Colorado River Authority, MEAG Power, Nebraska Public Power District, New York Power Authority, Omaha Public Power District, Orlando Utilities Commission, Platte River Power Authority, Puerto Rico Electric Power Authority, Sacramento Municipal Utility District, Salt River Project, Santee Cooper, Seattle City Light, Snohomish County Public Utility District No. 1, and Tacoma Power.
Data Requested in the Survey – Part 1 and Part 2

The proposed survey has 2 parts with separate subsections and asks to provide the following:

**Part 1**

(1) The number of Control Centers, transmission stations or substations, or generation plants that they own or operate; and

(2) The types and number of Cyber Assets at each of those locations (i.e., their Control Centers, Transmission stations or substations, or generation plants) that are included or excluded from the definition of BES Cyber Asset.

**Part 2**

NERC requests that applicable entities provide a description of the process they are using or will use to determine if a particular Cyber Asset is categorized as a BES Cyber Asset, including how an Entities determines if a particular piece of equipment is a Cyber Asset, and whether the Cyber Asset meets the 15-minute parameter.

NERC is providing a template to help entities tabulate and complete the survey data request.

Responses to Proposed Survey

**Narrative 1:** As part of the transition from CIP Version 3 to CIP Version 5 standards, Entities are currently drafting, developing, testing and validating the processes for the identification and classification of BES Cyber Assets, Systems and their respective site rankings and/or classifications. For a survey such as this, LPPC members will use readily available information and at times extrapolate samples to estimate total company values.

**Recommendation 1:** LPPC recommends that the best available information be used to respond to this survey.

**Narrative 2:** The survey proposed, meets the initial request in paragraph 124 to create a list of cyber assets that are included or excluded. However, simply creating a list of the number of assets that are in or out does not provide the data necessary to answer the underlying questions posed by FERC.

**Recommendation 2:** LPPC would suggest that it would be a more appropriate approach to survey the systems that are included or excluded based on the 15-minute criteria. The assets themselves are determined by evaluating the BROS. It is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint.

A secondary benefit of a systems based approach, as suggested above, would be that industry may be able to provide this information to NERC in a more timely manner that would not be allowed through a count of every asset.
Narrative 3: LPPC believes that the survey places a large burden on the entities that must provide estimated inventories and respond to this request. LPPC notes that Order 791 did not require NERC to survey all registered entities.

Recommendation 3: LPPC recommends that NERC reduce the burden on registered entities by proposing to survey through either 1) a sampling of entities across the BES, 2) request that entities send data from a sample facility, or 3) request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions. The sample size can be used to estimate expected continent wide results.

Narrative 4: While the survey aligns somewhat with CIP-002-5 processes, because the Version 5 processes are in draft form and function, attempting to use them early will produce questionable results.

Recommendation 4: Same as Recommendation 3.

Narrative 5: The survey scope requires labor intensive tasks in order to assess, tabulate and differentiate all Cyber Assets, their related Systems and locations, both in scope and not in scope. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets than required alone by CIP Version 5. For example, Version 5 does not require a list, whereas this survey requires the development of a list. As long as NERC and FERC will be satisfied with best estimates and information currently available. This survey may be completed within the time estimates provided.

And Low Impact Generation plants for example may contain thousands of specialized Cyber Assets that have never been counted. Once again, a sample of plant information and extrapolation will be the best information provided within the estimated hours provided.

Recommendation 5: None

Narrative 6: The survey questions (as currently written) require the full assessment to be complete for all cyber assets including those in the Low category. CIP Version 5 does not require a list of for the low category.

Recommendation 6: Same as Recommendation 3.

Narrative 7: The timing of the proposed survey is problematic. Entities are in the midst of transitioning from Version 3 to Version 5 as well as preparing for combined audits. This involves developing and implementing new procedures while preparing for Version 3 and Version 5 audits, and validating sound internal CIP compliance practices.

Recommendation 7: LPPC recommends requesting a time extension from FERC.
Narrative 8: The NERC survey and Attachment 1 document lists survey requirements and parameters for devices and systems which are not considered BES Cyber Systems. “Physical Access Control System,” “Locally Mounted Physical Security,” “Network Printer,” etc., for example are non-BES Cyber Systems and are inherently considered to be a class in themselves outside of BES Cyber Assets, i.e., PACS. Part 2 also questions the processes used to determine BES Cyber Assets.

Recommendation 8: LPPC recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems. LPPC Members also recommend seeking further comments regarding Entities processes for BCA determination or to request information to ascertain the recommended LPPC Members methodologies and use those as basis in a guidance document.

Information Required by ROP Section 1602.2

Narrative 9: See “Information Required by ROP Section 1602.2,” section b. (p. 25): The second sentence states, "the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards …”

The last sentence states, “NERC will also use information learned from the Transition Study for the information filing.” LPPC Members request that NERC provide a date when the results of the Transition Study will be published. LPPC Members hope to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

Recommendation 9: LPPC requests that NERC include the implementation period timeline in the explanation. LPPC requests that NERC provide a date when the results of the Transition Study will be published. LPPC Members hope to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts. The NERC Guideline and Transition Study delivery dates have been problematic and NERC’s deliverables need to be timely.

Narrative 10: The explanation of 1c, how the data will meet its obligations under the FERC directive is not complete. The survey only addresses the first two questions from FERC: specific ways in which entities determine which Cyber Assets meet the 15 minute parameter and types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets.

Recommendation 10: LPPC is concerned that clarifying the survey responses will only meet part of the NERC Directive. NERC will have to respond to the remaining questions through another means.

Narrative 11: NERC states the data or information collected will be validated by:
- Identifying Registered Entities applicable to CIP Version 5
- Instructing the entities on how to respond to the survey
- Collecting and sorting the data
- Comparing a list of Registered Entities with the respondents to ensure the responses are received as request.
- NERC will further validate the data provided.
The steps above only state how NERC will ensure appropriate entities responded but do not clearly define how NERC will validate the actual data provided. The statement, “NERC will further validate the data provided” is ambiguous.

**Recommendation 11:** LPPC recommends clearly describing how the actual data will be validated to comply with NERC Rules of Procedure Section 1600.

**Narrative 12:** LPPC Members required to respond to the survey include Distribution Providers (as described in the applicability section of 4.1.2 or CIP-003-5. Was the intent to reference CIP-003-5 or CIP-002-5? Does NERC have a list of entities that meet those criteria? It will be difficult to ensure all Registered Entities required to respond have completed the survey without a list of Distribution Providers meeting the criteria.

**Recommendation 12:** LPPC recommends removing DP’s from the list of entities that are required to respond or ensuring a list of DP’s meeting that criterion is available. Additionally, it is expected that the Risk-Based Registration (RBR) activity will reduce the number of DPs and that needs to be taken into account.

**Information Required by ROP Section 1602.2**

**Narrative 13:** The explanation and functional uses of asset types does not clearly delineate corporate business functional assets (corporate IT infrastructure) from BES Cyber Assets.

**Recommendation 13:** LPPC requests that NERC clarify that the survey does not include assets used for Information Technology (IT) support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.

**Narrative 14:** See Definition of “Computer Networking Devices” (p. 29): The primary function of the examples of firewalls, terminal servers, IDPS, and SEIMS do not match the proposed definition. LPPC Members believe that the current definition may provide confusion within the industry and reduce the accuracy of the survey responses.

**Recommendation 14:** LPPC recommends that NERC remove the examples of firewalls, terminal servers, IDPS, and SEIMS from the definition. It is recommended that NERC propose additional definitions to accurately encompass any account of these assets within the survey inventory.

**Narrative 15:** See, Definition of “Infrastructure Support” (p. 29): The primary function of the examples of Active Directory and certificate management services do not match the proposed definition. LPPC Members believe that the current definition may provide confusion amongst the entities and reduce the accuracy of the survey responses.
**Recommendation 15:** LPPC recommends that NERC remove the examples of Active Directory and certificate management services from the definition. It is recommended that NERC propose additional definitions to accurately encompass any account of these assets within the survey inventory.

**Narrative 16:** See Definition of “Historian” (p. 29, 31, 32): LPPC believes that historians are used for recording after-the-fact data this can be used for engineering analysis. LPPC Members believe that historians have no ability to affect the operation of the BES.

**Recommendation 16:** LPPC recommends that NERC remove them from the scope of the survey.

**Narrative 17:** See Definition of “Physical Access Control Systems” (p.29, 31 33): Registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. LPPC does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the Bulk Electric System.

**Recommendation 17:** LPPC recommends that NERC remove them from the scope of the survey. If Physical Access Control Systems are not removed from the survey, LPPC requests that NERC clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.

**Narrative 18:** See Definition of “Locally Mounted Physical Security Device” (p.30, 31, 33): LPPC Members do not believe that Locally Mounted Physical Security Devices should be included within the survey because they do not affect reliable operation of the Bulk Electric System. LPPC Members believe that Locally Mounted Physical Security Devices have no potential to impact the BES because they are typically serial devices with little or no cyber capability.

**Recommendation 18:** LPPC recommend that NERC remove them from the scope of the survey. If Locally Mounted Physical Security Devices are not removed from the survey, LPPC requests that NERC clarify that only Locally Mounted Physical Security Devices protecting Physical Security Perimeters (PSPs) are included in the survey.

**Narrative 19:** See, Definition of “Sensor / Actuator / Transmitter” (p.32): LPPC is concerned about the possible scope of the proposed definition because an individual generating unit could possibly have hundreds of sensors, actuators, and transmitters. In general LPPC Members believes that these devices have little or no cyber capability and therefore no potential to impact the BES from a cyber perspective. LPPC believes that this component of the request could be very onerous for generation facilities, and would not provide valuable information because of the many types of devices included in the category.

**Recommendation 19:** LPPC requests that NERC remove the “Sensor / Actuator / Transmitter” category from the scope of the request. If NERC does not remove the category, LPPC requests that NERC narrow the category and suggests that this may yield more meaningful information.
**Recommendation 20:** See Definition of “IED/Relay” (p. 33): LPPC requests that NERC remove relay devices that are isolated and use serial interfaces from the scope of the survey because they have no potential impact on the BES from a cyber perspective.

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**Conclusion**

The estimated relative burden in fulfilling this survey is dependent upon the size of the entity and the extent of the Entities Bulk Electric System Cyber Assets, Systems and locations, as well as the maturity of their processes for identifying and classifying Cyber Assets. However, within your FAQ it is interpreted that best efforts are sufficient.

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**Definitions**

BES Cyber Asset (BCA): A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems. A Transient Cyber Asset is not a BES Cyber Asset.

The LPPC Members thank NERC staff with the opportunity to comment on the questionnaire before it is issued. This is a sign of good outreach, collaboration and a willingness to work together. It is greatly appreciated.
Comments of
NAGF
A Working Group of the North American Generator Forum ("NAGF") convened and respectfully submits these comments to the proposed Survey Regarding the Scope of the Term "BES Cyber Asset" dated May 30, 2014.

The NAGF is a forum to provide entities registered as Generator Owners and Operators ("GO" / "GOP") a vehicle to collaborate on issues related to registration, compliance, reliability standards development and compliance and other related topics. The forum is intended to provide GO/GOPs a means to work with the Electric Reliability Organization and Regional Entities regarding compliance and other reliability related matters affecting registered GO/GOPs with the ultimate goal of improving the reliability of the bulk electric system. The NAGF currently has a roster of over 600 members representing over 190 companies who are registered as GO/GOPs.

The Working Group ("WG") was made up of members from the following organizations: AEP, Dominion, Duke Energy, EnergySec, GDF Suez North America, Pacific Gas & Electric, PPL, Southern Company, TVA, and WE Energies. The NAGF is pleased to submit the comments of the Working Group.

**Overall Comments:** The NAGF WG recommends that the proposed survey should not be submitted as a Section 1600 Data Request in accordance with NERC Rules of Procedure. The current format of the survey is overly burdensome and NERC should strongly consider an alternative approach to address the directives of the Federal Energy Regulatory Commission ("FERC" or "Commission") mentioned in FERC Order No. 791¹. The themes below outline the reasons why the NAGF WG believes the survey should not be submitted to the NERC Board of Trustees in its current format. An alternative solution that the NAGF WG believes still meets the intent of FERC’s directives is also provided.

**Theme #1 – Scope of Survey:** The proposed scope of the survey goes beyond the directives of FERC’s request in addition to going beyond the scope of CIP-002-5.1.

Order No. 791 asks that NERC explain “types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why”². FERC later clarified in Order No. 791-A that the Commission “did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter”³. Despite FERC’s clarification, NERC is proposing an inventory

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² Order No. 791, 145 FERC ¶ 61,160 at P 124
survey of all Cyber Assets and those that may be included as well as excluded from consideration as a BES Cyber Asset due to the 15-minute parameter. Additionally, FERC never directed NERC to solicit information from each Registered Entity in order to draft the informational filing back to FERC. This is further clarified in Order No. 791-A in which the Commission states that “NERC could use the participants in the pilot program...as the basis for the survey”⁴. A Section 1600 Data Request would make it mandatory that each Registered Entity submit data back to NERC in contrast to FERC’s clarification.

Several elements of the proposed survey go beyond the requirements stated within CIP-002-5.1. CIP-002-5.1 R1.3 states that “a discrete list of low impact BES Cyber Systems is not required”. The purpose of such a requirement was because it was determined that development and maintenance of an inventory of low impact BES Cyber Systems would be overly burdensome. In Order No. 791, FERC agreed and stated that “it would be unduly burdensome to require responsible entities to create and maintain an inventory of Low Impact assets...Creating and maintaining such a list could also divert resources away from the protection of Medium and High Impact assets”⁵. In contradiction, NERC’s survey is requiring entities to perform inventories of Low Impact BES Cyber Systems.

Additionally, several device types requested to be inventoried are not in line with the expectation of what would be considered a BES Cyber Asset. For example, one of the device types that is requested to be inventoried are Physical Access Control Systems (“PACS”). A Physical Access Control System is another device type as defined by the NERC Glossary and is not within consideration of a BES Cyber Asset. Rather, PACS are Cyber Assets associated with BES Cyber Systems and are not within scope of CIP-002-5.1. Another device type requested to be inventoried are Locally Mounted Physical Security. Locally mounted hardware used for the purposes of physical security are specifically excluded per the NERC Glossary definition of PACS and therefore are not subject to CIP scope. Several device types listed in Attachment 1 of the survey are generally not expected to be BES Cyber Assets, including, but not limited to: Network Printers, Data Acquisition Servers, Fault Recorders, Historians, Training Simulators, Development & Testing systems, Marketing Systems, Physical Access Control Systems, Locally Mounted Physical Security Devices, and Equipment Diagnostic / Maintenance Devices⁶. The survey request also includes the need to identify “other” devices. This is overly broad and would not prevent an entity from having to identify and count non-operational systems like workstations on corporate networks, cell phones, and other devices that technically meet the definition of Cyber Asset.

Per NERC Rules of Procedure, a Section 1600 Data Request can only be used to meet NERC’s obligations under Section 215 of the Federal Power Act. Neither FERC’s directives nor the language of CIP-002-5.1 support NERC’s proposal that the survey is soliciting information necessary to meet its obligations.

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⁴ Order No. 791-A, 146 FERC ¶ 61,188 at P 21.
⁵ Order No. 791, 145 FERC ¶ 61,160 at P 111
**Theme #2 – Timing:** The required response timing of the survey, 70 days, is inconsistent with the timing allowed by CIP-002-5.1 to perform implementation work. The current compliance date for High and Medium Impact BES Cyber Systems to be subject to CIP-002-5.1 is April 1, 2016 and the current compliance date for Low Impact BES Cyber Systems to be subject to CIP-002-5.1 is April 1, 2017. This amount of time is necessary for the Registered Entities to gather the appropriate resources and prioritize the work needed to meet the compliance dates. FERC reiterated this within Order No. 791 by stating that “24-month implementation period for High and Medium Impact BES Cyber Systems and the 36-month implementation period for Low Impact BES Cyber Systems are reasonable”7. Requiring entities to essentially comply with CIP-002-5.1 by performing asset inventories and classifications within 70-days after the posting of the survey would be unduly burdensome and inconsistent with the amount of time allotted within the effective implementation plan for CIP version 5.

**Theme #3 – Resource Expectations:** The survey estimates that it will take approximately 40 hours total for a small entity or 100 hours total for a large entity to complete the survey. The NAGF WG disagrees with these estimates. As an example, performing an inventory and classification exercise needed to complete the survey for just one large fossil generation plant is estimated to take 160 man-hours8. For an entity with multiple facilities and facility types, this number will continue to grow. Entities expect that these activities will have to be performed, but they will be performed over long periods of time and to be consistent with the 24 and 36 month implementation windows allowed for by the standard. It is overly burdensome to expect entities to perform all of these inventories and classifications for all of its assets at the same time and within the timeframes proposed by the current survey. Additionally, since the survey is proposing to inventory out-of-scope items as well (see Theme #1), the estimates for number of hours required to perform the survey would only increase.

**Theme #4 – Lack of Clarity Derived from FAQ Document:** On July 2, 2014, NERC published the *Frequently Asked Questions, Survey Regarding the Scope of the Term BES Cyber Asset*. This document attempts to clarify the intent and desired response to the BES Cyber Asset survey. The NAGF WG does not believe that the FAQ provides any substantive clarity or alleviates any concerns drawn from the Themes listed above. In the FAQ NERC states that the survey does not require entities “to have an inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets” and that entities need only “provide an approximate number of those assets.” This clarifying language does not exist within the posted survey and being a Section 1600 survey an entity would have no other choice but to provide counts of devices that it could defend with substantive evidence. The FAQ’s clarification that approximate numbers be provided only furthers the argument that the results provided to NERC through the Section 1600 request would not be of any definitive value and would not meet the objectives of FERC’s directives.

**Proposed Alternative:** It is of the opinion of the NAGF WG, for the reasons stated above, that the proposed survey is an unreasonable solution to meeting FERC’s directives. The NAGF WG proposes as an alternative to a Section 1600 Data Request, that NERC work with the participants of the pilot

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7 Order No. 791, 145 FERC ¶ 61,160 at P 171
8 Assume 4 people, 1 week to perform = 160 man-hours
program to gather the information necessary for the filing in accordance with the Commission’s suggestion in Order No. 791-A. Only in the circumstance that the information obtained by working with the pilot program participants is determined to be deficient to meet FERC's directives should a broader data collection effort be considered. Even in that circumstance alternatives should be considered prior to consideration of a Section 1600 Data Request which requires participation from all Registered Entities.

Respectfully submitted;

/s/

Joshua Sandler
Security Practices Working Group Leader
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160 Greentree Drive, Suite 101
Dover, DE 19904
704-382-4504

July 14, 2014
Comments of CSU
Date: July 14, 2014

Subject: Comments regarding proposed NERC BES Cyber Asset Survey

Colorado Springs Utilities (CSU) is a NERC registered entity, and will be required to respond to the proposed BES Cyber Asset Survey. The purpose of this document is to provide comments regarding our concerns with the proposed survey.

Responses to Proposed Survey

Issue 1: As part of the transition from CIP Version 3 to CIP Version 5 standards, Colorado Springs Utilities is currently drafting, developing, testing, and validating the processes for the identification and classification of BES Cyber Assets, Systems, and their respective site rankings and/or classifications. For a survey such as this, Colorado Springs Utilities will be required to fast track the development and implementation of Version 5 processes to complete this survey by the anticipated deadline, resulting in a significantly earlier effective date for CIP 002-5.

Recommendation 1: Colorado Springs Utilities recommends waiting until CIP Version 5 programs and processes have developed and matured. This will allow us time to better understand the BES Cyber Asset identification and classification processes, as well as ensure a more accurate tally of Cyber Assets and their associated Systems and locations. With more time, the survey results will be more accurate, and will provide better industry guidance.

Issue 2: Colorado Springs Utilities believes that the proposed survey creates an unreasonable burden to develop inventories solely to respond to this request prior to the effective date of the standards.

Recommendation 2: Colorado Springs Utilities recommends that NERC reduce the burden on registered entities by 1) surveying a sampling of entities across the BES, or 2) request that entities send data from a sample facility, or 3) request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions.

Issue 3: The proposed survey requires labor-intensive tasks in order to assess, tabulate, and differentiate all Cyber Assets and their related Systems and locations, both in scope and not in scope for CIP Version 5. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets than required by CIP Version 5. Version 5 does not require a list of these Low Impact systems, whereas completion of this survey requires the development of a list.

For example, Low Impact generation plants may contain thousands of Cyber Assets. Not only would Colorado Springs Utilities be required to develop new and untested Low Impact or No Impact assessment processes, but we would also need to shift or add qualified staff in order to assess the large numbers associated with the survey requirements.

Working with untested and immature processes, and shifting resources during the Version 5 transition work will result in questionable survey results.
Recommendation 3: Colorado Springs Utilities recommends a survey based on risk and associated with High and Medium Impact BES Cyber Assets and their related Systems and sites/locations. The survey could also implement a sampling of Low Impact Cyber Assets and their associated Systems or locations but should not require a full inventory.

Issue 4: The timing of the proposed survey is problematic. Colorado Springs Utilities is in the midst of transitioning from Version 3 to Version 5 as well as preparing for a combined audit in 2015. This involves developing and implementing new procedures while preparing for Version 3 and Version 5 audits, and validating sound internal CIP compliance practices.

Recommendation 4: Colorado Springs Utilities recommends a survey be performed after CIP Version 5 is implemented and functional.

Issue 5: The proposed NERC survey and Attachment 1 document includes requirements and parameters for devices and systems that are not considered BES Cyber Systems. For example, “Physical Access Control System,” “Locally Mounted Physical Security,” and “Network Printer,” are non-BES Cyber Systems, and are considered a class in themselves outside of BES Cyber Assets.

Recommendation 5: Colorado Springs Utilities recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems.

Issue 6: The proposed mandatory response time is 70 days from survey issuance, with anticipated NERC Board of Trustees approval August 13-14, 2014. Assuming the survey is approved and released August 15th, this would make a response due by October 24, 2014. The response time will not allow sufficient time to gather the magnitude of data required in this data request.

Recommendation 6: Colorado Springs Utilities recommends NERC extend the amount of time allotted for entities to respond, or reduce the magnitude of the data required by excluding Low Impact cyber assets. Alternatively, NERC can consider issuing the survey in phases, with the first phase allowing a broad estimation, and a second phase requesting more specific data closer to the effective date of NERC CIP Version 5.

Issue 7: Regarding the definition of “Physical Access Control Systems” (p.29, 31, 33): Registered entities may have Physical Access Control Systems installed at many locations that protect portions of facilities, such as warehouses, that have no impact on the BES. Colorado Springs Utilities does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the Bulk Electric System.

Recommendation 7: Colorado Springs Utilities recommends that NERC remove Physical Access Control Systems from the scope of the survey. If Physical Access Control Systems are not removed from the survey, we request that NERC clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are in scope of the survey.
Comments of
Tri-State G&T
**Tri-State Generation and Transmission Association’s Comments regarding the NERC BES Cyber Asset Survey**

1. NERC should focus on what is specifically called out by FERC order 791 in paragraph 124. This survey appears to extend beyond the items identified within paragraph 124.
2. NERC should consider sampling registered entities for this information.
3. NERC should consider focusing on the “how” questions rather than the “what” and “how many” because due to the vagueness of BES Cyber System identification, statistics based on quantities will be meaningless. Examples of “how” questions include:
   a. Please describe the functions performed by the Cyber Assets that do not meet the 15-minute impact threshold, and the rationale for not including them.
   b. Please also describe, if applicable, why Cyber Assets or functions performed by the Cyber Assets are excluded from the definition of BES Cyber Asset for a reason other than the 15-minute impact threshold.
   c. Please describe the process you are using or will use to determine if a particular Cyber Asset meets the definition of BES Cyber Asset. Please also describe any challenges you have encountered while creating or executing your process.
   d. Which systems or network components associated with BES Cyber Systems would not be considered in scope of the CIP standards? Are these systems considered programmable? If not, what are their characteristics?
   e. How would you define programmable electronic device?
4. NERC should consider removing Low Impact Bes Cyber Assets and Low Impact facilities from this survey.
Comments of WICF
Date: July 14, 2014

Subject: Response to NERC Proposed Survey of BES Cyber Assets

The Western Interconnection Compliance Forum (WICF) has emerged as a dynamic information sharing organization within the Western Interconnection. It is run by and on behalf of entities subject to WECC and NERC compliance requirements. We have over 700 members (including non-voting membership) and are growing every day. The purpose of WICF is to provide registered functional entities within the Western Interconnection a venue to share knowledge and lessons learned regarding compliance matters, and to collectively develop best practices.

The WICF respects NERC’s efforts in attempting to meet the directives included in FERC Order No. 791. It is imperative NERC be timely and responsive to such an order.

WICF respectfully submits the attached comments developed by a team of WICF members which have been presented to, and are supported by a number of WICF members. WICF would like to emphasize the narratives and recommendations are not representative of the opinions of the entire WICF membership and note some opinions may be of a minority. However, many of the concerns expressed herein were common concerns amongst some of the membership. Additionally, whether a concern is recognized by a single member or is shared by the entire membership is not the point; the point that there is a concern validates a need for NERC to consider the comments and recommended alternatives. Therefore, in submitting the comments, concerns that were captured are represented. Additionally, we note some are similar or redundant but may have a different recommendations associated with the narrative statement.

WICF would like to thank NERC for the opportunity to comment.

Background of WICF Activities:

The posting of the NERC Proposed BES Cyber Asset Survey generated conversation amongst WICF members on the forum. The WICF determined there was enough interest and concerns expressed by the members that it would benefit the membership to host a WICF webinar for interested entities. WICF held the first webinar on June 18, 2014. This webinar included a review of NERC Rules of Procedure Section 1600 and the various sections of the survey. Based on the comments and feedback, a small group of WICF members developed a broad range of comments and associated recommendations for consideration and review at a follow-up webinar. WICF hosted a follow-up webinar on July 8, 2014 and reviewed the narratives. The presentations and narratives were provided to the WICF membership. Both webinars were Open Meetings and WECC staff was represented.

Initially, the WICF was not going to submit comments, rather encouraged individual entities to submit comments. However, at the conclusion of the July 8 webinar, it was highly encouraged by some members for WICF to submit the narratives as presented. As stated above, WICF decided it is in the interest of the membership to submit the following narratives. WICF has recommended entities submit comments individually which may support some or part of this submittal.
Overview Summary

The purpose of this document is to provide comments regarding the proposed NERC survey of BES Cyber Assets.

The purpose of the survey and data request is to determine the scope and reach of the term “BES Cyber Asset” (BCA). The survey will also provide guidance for the industry in determining BES Cyber Assets. The results of the survey would provide data to allow NERC to answer the following FERC questions:

1. Specific ways in which entities determine which Cyber Assets meet the 15-minute parameter;
2. Types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why;
3. Common problem areas with entities improperly designating BES Cyber Assets; and
4. Feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.

Data Requested in the Survey – Part 1 and Part 2

The proposed survey has 2 parts with separate subsections and asks to provide the following:

Part 1

1. The number of Control Centers, transmission stations or substations, or generation plants that they own or operate; and
2. The types and number of Cyber Assets at each of those locations (i.e., their Control Centers, Transmission stations or substations, or generation plants) that are included or excluded from the definition of BES Cyber Asset.

Part 2

NERC requests that applicable entities provide a description of the process they are using or will use to determine if a particular Cyber Asset is categorized as a BES Cyber Asset, including how an Entities determines if a particular piece of equipment is a Cyber Asset, and whether the Cyber Asset meets the 15-minute parameter.

NERC is providing a template to help entities tabulate and complete the survey data request.
WICF Responses to Proposed Survey

Narrative 1: As part of the transition from CIP Version 3 to CIP Version 5 standards, Entities are currently drafting, developing, testing and validating the processes for the identification and classification of BES Cyber Assets, Systems and their respective site rankings and/or classifications. For a survey such as this, Entities would be required to fast track the development and implementation of Version 5 processes in order to properly complete this survey.

Recommendation 1: Entity recommends waiting until CIP Version 5 programs and processes have developed and matured. This will provide Entities the tools to help NERC better understand and describe the BES Cyber Asset identification and classification processes, as well as ensure a more accurate tally of Cyber Assets and their associated Systems and locations. Together, these results will provide better industry guidance.

Narrative 2: The survey proposed, meets the initial request in paragraph 124 to create a list of cyber assets that are included or excluded. However, simply creating a list of the number of assets that are in or out does not provide the data necessary to answer the underlying questions posed by FERC.

Recommendation 2: We would suggest that it would be a more appropriate approach to survey the systems that are included or excluded based on the 15-minute criteria. The assets themselves are determined by evaluating the BROS. It is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint.

A secondary benefit of a systems based approach, as suggested above, would be that industry may be able to provide this information to NERC sooner than a count of the actual number of devices.

Narrative 3: Entity believes that the survey places a large burden on the entities that must develop inventories and respond to this request. Entity notes that Order 791 did not require NERC to survey all registered entities.

Recommendation 3: Entity recommends that NERC reduce the burden on registered entities by proposing to survey either a sampling of entities across the BES, or request that entities send data from a sample facility, or request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions.

Narrative 4: While the survey aligns somewhat with CIP-002-5 processes, because the Version 5 processes are in draft form and function, attempting to use them early will produce specious results.

Recommendation 4: This entity recommends such a survey occur after the related CIP Version 5 processes for identifying and classifying BES Cyber Assets, Systems and sites or locations is completed and validated. As mentioned above, Entities will be able to more accurately assess BES Cyber Assets and provide NERC with more valuable information about the process, impact and function.

Narrative 5: The survey scope requires labor intensive tasks in order to assess, tabulate and differentiate all Cyber Assets, their related Systems and locations, both in scope and not in scope. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets
than required alone by CIP Version 5. For example, Version 5 does not require a list, whereas this survey requires the development of a list. And Low Impact Generation plants for example may contain thousands of specialized Cyber Assets. In this regard, not only would Entities be required to develop new and untested Low Impact or No Impact assessment processes, but they would also need to shift or add qualified staff in order to assess the large numbers associated with the survey requirements. Working with untested and immature processes, and shifting resources during the Version 5 transition work, will result in questionable survey results.

**Recommendation 5:** Entity recommends a survey based on risk and associated with High and Medium Impact BES Cyber Assets and their related Systems and sites/locations. The survey could also implement a sampling of Low Impact Cyber Assets and their associated Systems or locations but should not require a full inventory.

**Narrative 6:** The survey questions (as currently written) require the full assessment to be complete for all cyber assets including those in the Low category. CIP Version 5 does not require a list of for the low category.

**Recommendation 6:** We would recommend a two-phased approach with the High and Medium surveys being completed in January of 2016 and the low Cyber Assets in January of 2017. It is unlikely that industry as a whole will be able to respond with appropriate data in the third quarter of 2014 as indicated in NERC’s preferred timeline. Further we would propose that the survey coincide more closely with the dates in the CIP version 5 implementation plan.

**Narrative 7:** The timing of the proposed survey is problematic. Entities are in the midst of transitioning from Version 3 to Version 5 as well as preparing for combined audits. This involves developing and implementing new procedures while preparing for Version 3 and Version 5 audits, and validating sound internal CIP compliance practices.

**Recommendation 7:** Entity recommends a proposed survey be coordinated in such a manner to correspond with an audit, or be performed after CIP Version 5 is implemented and functional.

**Narrative 8:** The NERC survey and Attachment 1 document lists survey requirements and parameters for devices and systems which are not considered BES Cyber Systems. “Physical Access Control System,” “Locally Mounted Physical Security,” “Network Printer,” etc., for example are non-BES Cyber Systems and are inherently considered to be a class in themselves outside of BES Cyber Assets, i.e., PACS. Part 2 also questions the processes used to determine BES Cyber Assets.

**Recommendation 8:** Entity recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems. Entity also recommends seeking further comments regarding Entities processes for determination or to request information to ascertain the recommended Entity methodologies and use those as basis in a guidance document.
Information Required by ROP Section 1602.2

Narrative 9: See “Information Required by ROP Section 1602.2,” section b. (p. 25): The second sentence states, "the Commission directed NERC to conduct a survey of responsible entities during the implementation period for the CIP Version 5 Reliability Standards ...".

The last sentence states, "NERC will also use information learned from the Transition Study for the information filing." Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

Recommendation 9: Entity requests that NERC include the implementation period timeline in the explanation. Entity requests that NERC provide a date when the results of the Transition Study will be published. Entity hopes to gain valuable insights from the study but will need sufficient time to incorporate the results into Version 5 transition planning efforts.

Narrative 10: The explanation of 1c, how the data will meet its obligations under the FERC directive is not complete. The survey only addresses the first two questions from FERC: specific ways in which entities determine which Cyber Assets meet the 15 minute parameter and types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets.

Recommendation 10: Entity recommends clarifying the survey responses will only meets part of the NERC Directive. NERC will have to respond to the remaining questions through another means.

Narrative 11: NERC states the data or information collected will be validated by:
- Identifying Registered Entities applicable to CIP Version 5
- Instructing the entities on how to respond to the survey
- Collecting and sorting the data
- Comparing a list of Registered Entities with the respondents to ensure the responses are received as request.
- NERC will further validate the data provided.

The steps above only state how NERC will ensure appropriate entities responded but do not clearly define how NERC will validate the actual data provided. The statement, "NERC will further validate the data provided" is ambiguous.

Recommendation 11: Entity recommends clearly describing how the actual data will be validated to comply with NERC RoP Section 1600.
**Narrative 12:** Entities required to respond to the survey includes Distribution Providers (as described in the applicability section of 4.1.2 or CIP-003-5). Was the intent to reference CIP-003-5 or CIP-002-5? Does NERC have a list of entities that meet that criteria? It will be difficult to ensure all Registered Entities required to respond have completed the survey without a list of Distribution Providers meeting the criteria.

**Recommendation 12:** Entity recommends removing DP’s from the list of entities that are required to respond or ensuring a list of DP’s meeting that criterion is available.

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**Narrative 13:** The proposed NERC response time is 70 days from issuance with anticipated NERC Board of Trustees approval August 13-14, 2014. Assuming it would be released August 15, this would make a response due by October 24, 2014. The response time will not allow entities sufficient time to accurately gather the magnitude of data required in this data request.

**Recommendation 13:** Entity recommends NERC extend the amount of time allotted for entities to respond or reduce the magnitude of the data required by excluding Low cyber assets. Alternatively, NERC can consider issuing the survey in phases with the first phase allowing a broad estimation with a second phase requested more specific data closer to the effective date of NERC CIP Version 5.

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**Narrative 14:** NERC estimates the burden to be ‘minimal’ estimating 40 hours for a ‘small’ entity and less than 100 hours for a ‘larger’ entity. While it is expected entities are starting to transition to CIP Version 5, entities are still in the process of developing procedures and have not been required to inventory Cyber Assets at Low BES facilities or non-BES Cyber Assets. To do an accurate inventory at Low facilities will be much more time consuming than the NERC estimate; especially considering Low BES Generation facilities.

**Recommendation 14:** Entity recommends NERC substantiate the estimated hours.

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**Information Required by ROP Section 1602.2**

**Narrative 15:** The explanation and functional uses of asset types does not clearly delineate corporate business functional assets (corporate IT infrastructure) from BES Cyber Assets.

**Recommendation 15:** Entity requests that NERC clarify that the survey does not include assets used for Information Technology (IT) support. These assets support e-mail and organization business functions that have no connection to SCADA equipment, and therefore have no ability to affect BES operations.
**Narrative 16:** See Definition of “Historian” (p. 29, 31, 32): Entity believes that historians are used for recording after-the-fact data which can be used for engineering analysis. Entity believes that historians have no ability to affect the operation of the BES. *Note: some entities use historians for real-time planning and operations – this recommendation may not be applicable.*

**Recommendation 16:** Entity recommends that NERC remove them from the scope of the survey.

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**Narrative 17:** See Definition of “Physical Access Control Systems” (p. 29, 31 33): Registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. Entity does not believe that Physical Access Control Systems should be included within the survey because they do not affect reliable operation of the Bulk Electric System.

**Recommendation 17:** Entity recommends that NERC remove them from the scope of the survey. If Physical Access Control Systems are not removed from the survey, Entity requests that NERC clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.

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**Narrative 18:** See Definition of “Locally Mounted Physical Security Device” (p. 30, 31, 33): Entity does not believe that Locally Mounted Physical Security Devices should be included within the survey because they do not affect reliable operation of the Bulk Electric System. Entity believes that Locally Mounted Physical Security Devices have no potential to impact the BES because they are typically serial devices with little or no cyber capability.

**Recommendation 18:** Entity recommends that NERC remove them from the scope of the survey. If Locally Mounted Physical Security Devices are not removed from the survey, Entity requests that NERC clarify that only Locally Mounted Physical Security Devices protecting Physical Security Perimeters (PSPs) are included in the survey.

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**Narrative 19:** See Definition of “Sensor / Actuator / Transmitter” (p. 32): Entity is concerned about the possible scope of the proposed definition because an individual generating unit could possibly have hundreds of sensors, actuators, and transmitters. In general, Entity believes that these devices have little or no cyber capability and therefore no potential to impact the BES from a cyber perspective. Entity believes that this component of the request could be very onerous for generation facilities, and would not provide valuable information because of the many types of devices included in the category.
**Recommendation 19:** Entity requests that NERC remove the “Sensor / Actuator / Transmitter” category from the scope of the request. If NERC does not remove the category, Entity requests that NERC narrow the category and suggests that this may yield more meaningful information.

**Recommendation 20:** See Definition of “IED/Relay” (p. 33): Entity requests that NERC remove relay devices that are isolated and use serial interfaces from the scope of the survey because they have no potential impact on the BES from a cyber perspective.

**Narrative 21:** [Reference BES Cyber Asset Survey FAQ sent July 7, 2014 Q1] “NERC is requesting this information in order to meet the Commission’s directive in Order No. 791. In Order No. 791, FERC directed NERC to conduct a survey of Cyber Assets included or excluded from the definition of BES Cyber Asset. FERC also instructed NERC to address certain issues in an informational filing, due February 3, 2015, based on the survey results. To comply with FERC’s directives, NERC needs the level of detail requested in the survey in order to provide meaningful analysis as part of its informational filing to FERC. (Emphasis Added)” Entity disagrees the level requested in the survey is directed in the FERC Order No. 790. Entity notes FERC Order No. 791 specifically states NERC explain the types or functions of Cyber Assets that are excluded from being designates as BES Cyber Assets and the rationale as to why.

**Recommendation 21:** Entity recommends NERC modify the survey request to require only types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets for Low impact BES Cyber Systems.

**Conclusion**

The estimated relative burden in fulfilling this survey is dependent upon the size of the Entity and the extent of the Entities Bulk Electric System Cyber Assets, Systems and locations, as well as the maturity of their processes for identifying and classifying Cyber Assets. However, due to the requirements to assess and classify Cyber Assets in and out of scope, the burden is high. Entity recommends changing the scope of the survey, changing the schedule of the survey, and defining the terminology and parameters of the survey.

**Definitions**

BES Cyber Asset (BCA): A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or
otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems. A Transient Cyber Asset is not a BES Cyber Asset.
Comments of
South Feather Water & Power Agency
Proposed NERC Cyber Asset Data Request – Request for Public Comments

South Feather Power Project Comments on FERC Order No. 791 Survey

The South Feather Power Project (SFPP) consists of hydroelectric generators that are connected to a radial 115 kV line owned by a third party. Under the CIP Version 2 standards, the two BES–defined Generation Facilities were classified as Non-critical assets, and under CIP Version 5 they will be classified as Low-Impact assets.

Comment 1:
A BES Cyber Asset is defined as “a Cyber Asset that if rendered unavailable, degraded or misused would, with 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which if destroyed, degraded or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System.” It follows that if loss of a Facility (e.g., a BES Generation Facility) would not impact the reliable operation of the Bulk Electric System due to its megawatt capacity, then any Cyber Asset associated with the Facility would not meet the definition of a BES Cyber Asset. However, this is not clear in the Section III.b. tables of the proposed survey.

Comment 2:
Section III.a. requests the total number of generation plants owned by the entity. The data request should only be applicable to BES-defined Generation Facilities and this should be clarified when requesting the number of generation plants owned or operated. The questions should be rephrased to request the number of BES Generation Facilities that have a Medium Impact Rating and the number of BES Generation Facilities that have a Low Impact Rating, with a possible follow-up question regarding the number of generators that are owned or operated by the entity that do not meet the BES definition. The tables under Section III.b. should specify that the Generation Plants for which the response is requested are only the BES Generation facilities.

Comment 3:
Section III.c and III.d ask for descriptions of functions provided by Cyber Assets that do not meet the 15-minute impact threshold. However, if an asset does not meet the 15-minute impact threshold, it would seem that per the definition of a BES Cyber Asset, it is outside the scope of the survey. Questions III.c. and III.d. should be eliminated. The survey should only include questions regarding BES Cyber Systems.

Respectfully submitted,
Kathryn Zancanella, Power Division Manager
Comments of NRG
NRG Energy, Inc. ("NRG") hereby respectfully submits these comments in response to the Request for Public Comment on the Proposed Request for Data or Information issued by the North American Electric Reliability Corporation ("NERC" or "ERO") on May 30, 2014. This Survey proposes to collect data (the “Data Request”) pursuant to Section 1600 of the NERC Rules of Procedure ("ROP") regarding the scope and reach of the term “BES Cyber Asset”, as defined in NERC’s Glossary of Terms Used in NERC Reliability Standards (“NERC Glossary”). NRG supports NERC’s proposal to collect data through the use of the proposed Survey. NRG provides additional comments on the proposed survey in section II of this filing.

I. COMMUNICATIONS
Notices and communications regarding this filing may be addressed to:

NRG Energy, Inc.
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Regulatory Compliance
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II. COMMENTS
NRG Energy, Inc. ("NRG") has reviewed and generally supports NERC’s proposal to collect data (the “Data Request”) pursuant to Section 1600 of the NERC Rules of Procedure ("ROP") regarding the scope of the term “BES Cyber Asset”, as defined in NERC’s Glossary of Terms Used in the NERC Reliability Standards (“NERC Glossary”) through the use of the proposed Survey. NRG understands that NERC is recommending the proposed survey in an effort to ensure that the ERO receives adequate information to perform studies regarding the scope and reach of the term “BES Cyber Asset” to submit an informational filing to FERC within one year to explain the following: (1) specific ways in which entities determine which Cyber Assets meet the 15-minute parameter; (2) types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why; (3) common problem areas with entities improperly designating BES Cyber Assets; and (4) feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.
NRG encourages NERC to limit those studies consistent with the public comments received, which minimize the burden on the affected stakeholders. Specifically, NRG encourages NERC to decrease the burden on responsible entities required to provide (i) Cyber Asset type quantity estimates for low category BES Cyber Systems and (ii) open-ended responses to questions in Part 2 of the survey. Additionally, NRG urges NERC to provide more guidance on the electronic delivery of confidential information.

A. **NERC should decrease the incremental burden on responsible entities to provide Cyber Asset type quantity estimates for low rating BES Cyber Systems in Part 1 of the survey.**

To lessen the burden on entities in responding to Part 1 of the data requested, NRG requests that NERC consider removal or reduction of the quantity of data being requested for low rating BES Cyber Systems. This category appears to require information that entities are not required to provide under NERC CIP V5. NRG recognizes the July 2, 2014 NERC Survey FAQ response relating to this topic and recommends that NERC add this clarification direction within the survey.

NERC’s estimated resource hour timeframes for item 6 are significantly understated. See Information Required by ROP Section 1602.2 (page 26 of the Request for Public Comment). Based on the proposed survey, NRG expects that it will take combined resources significantly more than 40 (for small) or 100 (for large entities) incremental work-hours (per entity) to complete the NERC data request survey.

B. **NERC should decrease the incremental burden on responsible entities to provide open-ended responses to survey questions in Part 2 of the survey.**

To lessen the burden on entities in responding to Part 2 of the data request, NERC should provide or provide citation of a guidance example for how the responsible entity may complete Attachment 2, Part 2 of the Data Request. This will reduce the incremental burden on entities to complete the data request.

C. **NERC should provide guidance on the file transfer requirements of the survey responses.**

NERC should provide criteria guidance for secure file transfer of responses by responsible entities to ensure the security and confidentiality of the file transport of the survey responses.

**III. CONCLUSION**

NRG Energy Inc. supports the proposed survey and requests that the ERO decrease the stakeholder resource burden and ensure the secure, confidential delivery of the survey responses to the extent possible as discussed herein.

Respectfully submitted,

*Kara Douglas*

Dated: July 11, 2014

“The informational filing should not provide a level of detail that divulges CEII data. This filing should also help other entities implementing CIP version 5 in identifying BES Cyber Assets.” - Paragraph 124
Comments of
OEVC
Occidental Energy Ventures Corp.
Comments on NERC’s Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”

The Survey Regarding the Scope of the Term BES Cyber Asset ("proposed survey") is the mechanism NERC proposes to use to collect the information directed by FERC. Specifically, NERC proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk power system to submit data to “satisfy FERC’s directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.”

The proposed survey should not be submitted to the NERC Board of Trustees in its current form due to a number of concerns. The current format of the survey is overly burdensome and NERC should consider an alternative approach to address the directives of the Federal Energy Regulatory Commission (“FERC”) mentioned in FERC Order No. 791.

Scope of Survey: The proposed scope of the survey goes beyond the directives of FERC’s request in addition to going beyond the scope of CIP-002-5.1. Order No. 791 asks that NERC explain “types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets and the rationale as to why”. FERC later clarified in Order No. 791-A that FERC “did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter”. Despite FERC’s clarification, NERC is proposing an inventory survey of all Cyber Assets and those that may be included as well as excluded from consideration as a BES Cyber Asset due to the 15-minute parameter. In Order No. 791, FERC stated that it “directs NERC to conduct a survey of Cyber Assets that are included or excluded under the new BES Cyber Asset definition.” FERC does not direct NERC to conduct a survey that counts assets that are included and excluded under the BES Cyber Asset definition, which is what the proposed survey requires. Additionally, FERC never directed NERC to solicit information from each Registered Entity in order to draft the informational filing back to FERC. This is further clarified in Order No. 791-A in which FERC states that “NERC could use the participants in the pilot program…as the basis for the survey”. A Section 1600 Data Request would make it mandatory that each Registered Entity submit data back to NERC in contrast to FERC’s clarification.

Several elements of the proposed survey go beyond the requirements stated within CIP-002-5.1. CIP-002-5.1 R1.3 states that “a discrete list of low impact BES Cyber Systems is not required”. The purpose of such a requirement was because it was determined that development and maintenance of an inventory of low impact BES Cyber Systems would be overly burdensome. In Order No. 791, FERC agreed and stated that “it would be unduly burdensome to require responsible entities to create and maintain an inventory of Low Impact assets…Creating and maintaining such a list could also divert resources away from the protection of Medium and High Impact assets”. In contradiction, NERC’s survey is requiring entities to perform inventories of Low Impact BES Cyber Systems. To complete the survey, entities must count all of their cyber
assets, apply the BES Cyber Asset definition to each cyber asset, apply the CIP-002-5.1 Attachment 1 impact rating criteria, and identify the type of assets at each location (using the cyber asset types defined in the survey). A survey that requires these steps is an inventory-type survey. FERC explicitly said in Order 791-A that an inventory-type survey was not directed and therefore it is not needed for NERC to meet its obligations under Section 215 of the Federal Power Act.

In a Frequently Asked Questions (FAQ) document posted by NERC on July 8, 2014, NERC stated that they need “the level of detail requested in the survey in order to provide meaningful analysis as part of its information filing to FERC.” However, FERC does not require NERC to provide an explanation based on an analysis of all registered entities in its informational filing. As stated above, FERC clarified that an inventory-type survey is not needed and suggested that NERC use the pilot program participants as the basis for the survey, therefore such detail is not needed by NERC.

Additionally, several device types requested to be inventoried are not in line with the expectation of what would be considered a BES Cyber Asset. For example, one of the device types that is requested to be inventoried are Physical Access Control Systems (“PACS”). A Physical Access Control System is another device type as defined by the NERC Glossary and is not within consideration of a BES Cyber Asset. Rather, PACS are Cyber Assets associated with BES Cyber Systems and are not within scope of CIP-002-5.1. Another device type requested to be inventoried are Locally Mounted Physical Security Devices. Locally mounted hardware used for the purposes of physical security are specifically excluded per the NERC Glossary definition of PACS and therefore are not subject to CIP scope. Several device types listed in Attachment 1 of the survey are generally not expected to be BES Cyber Assets, including, but not limited to: Network Printers, Data Acquisition Servers, Fault Recorders, Historians, Training Simulators, Development & Testing systems, Marketing Systems, Physical Access Control Systems, Locally Mounted Physical Security Devices, and Equipment Diagnostic / Maintenance Devices. The survey request also includes the need to identify “other” devices. This is overly broad and would not prevent an entity from having to identify and count non-operational systems like workstations on corporate networks, cell phones, and other devices that technically meet the definition of Cyber Asset.

Per NERC Rules of Procedure, a Section 1600 Data Request can only be used to meet NERC’s obligations under Section 215 of the Federal Power Act. Neither FERC’s directives nor the language of CIP-002-5.1 support NERC’s proposal that the survey is soliciting information necessary to meet its obligations.

**Timing and New Obligation:** The proposed survey creates a new obligation and requires early enforcement of CIP-002-5.1, which will impose a significant burden on entities rather than help them implement CIP version 5 as FERC intended in Order No. 791. As stated above, the use of NERC Rules of Procedure Section 1600 makes responding to a data or information request mandatory for all owners, operators, and users of the bulk power system. Counting all cyber assets—in and out of scope of the Cyber Asset definition—effectively requires entities to apply
CIP-002-5.1 within 70 days of issuance of the survey, which is expected in August upon approval by the NERC Board of Trustees. This is inconsistent with the timing allowed by CIP-002-5.1 to perform implementation work. The current compliance date for High and Medium Impact BES Cyber Systems to be subject to CIP-002-5.1 is April 1, 2016 and the current compliance date for Low Impact BES Cyber Systems to be subject to CIP-002-5.1 is April 1, 2017. This amount of time is necessary for the Registered Entities to gather the appropriate resources and prioritize the work needed to meet the compliance dates. FERC reiterated this within Order No. 791 by stating that “24-month implementation period for High and Medium Impact BES Cyber Systems and the 36-month implementation period for Low Impact BES Cyber Systems are reasonable”. Requiring entities to essentially comply with CIP-002-5.1 by performing asset inventories and classifications within 70-days after the posting of the survey would be unduly burdensome and inconsistent with the amount of time allotted within the effective implementation plan for CIP version 5. The 70 day time period is also insufficient as the proposed survey does not ask entities to provide estimates of the number of cyber assets but to provide actual counts and identify the counts by NERC-defined cyber asset type.

The steps required to complete the proposed survey and the fact that the survey would be mandatory under Section 1600 imposes a new obligation for all owners, operators, and users of the bulk power system. Counting all low impact cyber assets that meet and do not meet the BES Cyber Asset definition is a particular concern as CIP 003 Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Counting low impact cyber assets is not required by CIP version 5, but is required by NERC’s proposed survey. The proposed survey also defines the types of cyber assets to count, which is new and specific to the proposed survey and a part of CIP version 5.

The survey forces entities to apply the BES Cyber Asset definition to each cyber asset associated with “low impact” control centers, transmission stations or substations, and generation plants. However, CIP-002-5.1 Requirement 1.3 only requires that entities “identify each asset that contains a low impact BES Cyber System according to Attachment 1, Section 3.” The standard also specifically states that “a discrete list of low impact BES Cyber Systems is not required.” To comply with the standard, an entity must identify all of their assets (e.g., control centers, substations, generation plants) that meet the asset description in CIP-002-5.1, R1 (“R1 assets”) and then apply the Attachment 1 Medium and High Impact criteria to these assets to identify and inventory all associated high and medium impact BES Cyber Systems. For R1 assets that do not contain any High or Medium Impact BES Cyber Systems (“low impact assets”), entities can choose to apply the BES Cyber Asset definition to cyber assets at these assets or identify that the asset contains a low impact BES Cyber System. An entity is not required by CIP-002-5.1 to identify and assess every cyber asset associated with a low impact asset. However, the proposed survey would require entities to identify, assess, and inventory all of the cyber assets at low impact cyber assets, which imposes a new burden on entities that is not also required by the standard.

Resource Expectations: The burden imposed by the proposed survey is significant. NERC estimates that the counting and subsequent categorization by the NERC-provided cyber asset
types included in the proposed survey will require the expenditure of, over $8 million, in a condensed period of time (70 days). But, this $8 million estimate is based on NERC’s estimate of 40 – 100 hours per entity. OEVC disagrees with these estimates. Performing an inventory and classification exercise needed to complete the survey for just one large fossil generation plant is estimated to take 160 man-hours. It is expected that these activities will have to be performed, but they will be performed over long periods of time and will be consistent with the 24 and 36 month implementation allowed for by the standard. It is overly burdensome to expect entities to perform all of these inventories and classifications for all of its assets at the same time and within the timeframes proposed by the current survey. Additionally, since the survey is proposing to inventory out-of-scope items as well, the estimates for number of hours required to perform the survey would only increase. These costs for a survey to help FERC better understand the BES Cyber Asset definition is unreasonable and unduly burdensome.

The scope and burden of the proposed survey will also not help “other entities implementing CIP version 5 in identifying BES Cyber Assets” as FERC intended. Instead, the proposed survey will harm entities by requiring them to pull resources devoted to implementing CIP version 5 to complete the proposed survey. After NERC submits the informational filing to FERC, entities will have already invested resources on identifying BES Cyber Assets, which they may have to change based on the information filing NERC submits to FERC. Requiring all Registered Entities to respond to the survey increases the burden to the bulk power system owners, operators, and users without a commensurate benefit to reliability.

**Lack of Clarity:** The proposed survey is unclear, which will increase the burden for entities to respond to the survey and make it difficult for NERC to accurately respond to FERC in an informational filing. NERC’s issuance of a FAQ document on the proposed survey is a good indication that the survey is unclear. The proposed survey is also flawed because the tables assume that control centers, transmission stations or substations, and generation plants will be identified as low, medium, high impact. However, these assets may actually have a mix of assets and systems at different impact ratings. The survey tables require impact rating categorization at the control center, transmission station or substation, and generating plant level; however, CIP-002-5.1 Attachment 1 is focused on categorization at the BES Cyber System level.

For example, under CIP-002-5.1 Attachment 1 Section 2.1, consider a generation plant that has two generating units each with an 800 MW net Real Power capability over the preceding 12 months. The generation plant itself is not considered medium impact. Rather, it is only a candidate for having medium and/or low impact BES Cyber Systems since the plant has a 1600 MW Real Power capability over the previous 12 months. To properly classify the BES Cyber Systems, cyber assets for the site need to be evaluated to determine if it impacts the entire 1600 MW output from the plant or only 800 MW from a single unit within 15 minutes. The classification depends on the way the control systems and protection systems are installed. BES Cyber Systems that impact the entire 1600 MW output would be considered medium impact. BES Cyber Systems that only impact 800 MW would be considered low impact.
The ambiguities make it even more burdensome for entities to respond but will also make it difficult for NERC to interpret the survey results as each entity could interpret the request differently.

The proposed survey will also produce a large amount of range and explanation information for NERC to analyze and validate. NERC will receive responses from over a thousand entities, which will yield thousands of tables containing cyber asset counts. Only some of this data will be relevant or meaningful. The function descriptions that accompany these tables are likely to vary in detail and format, which will increase the burden on NERC to read and interpret these responses. We do not believe that NERC will be able to process the data in a useful or accurate fashion in the time frame required by FERC to respond to Order No. 791.

**Proposed Alternative:** For the reasons stated above, OEVC is of the opinion that the proposed survey is an unreasonable solution to meeting FERC’s directives. OEVC proposes as an alternative to a Section 1600 Data Request, that NERC work with the participants of the pilot program to gather the information necessary for the filing. Only if the information obtained by NERC in working with the pilot program participants is determined to be deficient to meet FERC’s directives should a broader data collection effort be considered. Even in that circumstance alternatives should be considered prior to consideration of a Section 1600 Data Request which requires participation from all Registered Entities. The questions proffered by FERC are qualitative (not quantitative) in nature. Once the pilot participants’ descriptive information is aggregated and summarized, NERC could then conduct a qualitative survey to obtain specific feedback on the responses to these questions from a sample of other Registered Entities. A mandatory Section 1600 survey of all Registered Entities is not necessary to collect enough information to be informative to FERC’s directive. A qualitative survey targeted at obtaining feedback on answers to FERC’s questions rather than the comprehensive data collection in the proposed survey will significantly reduce the burden on bulk power system asset owners, operators, users, and NERC itself. This alternative approach would address FERC’s directive in Order No. 791, reduce the burden on all entities and NERC, and thereby allow all entities, including NERC, to more knowledgably focus on the actual implementation of CIP version 5.
Comments of
PPL
Re: NERC BES Cyber Asset Survey

These comments are submitted on behalf of the following PPL NERC Registered Affiliates (PPL):

- LG&E and KU Energy, LLC
- PPL Electric Utilities Corporation
- PPL EnergyPlus, LLC
- PPL Generation, LLC
- PPL Susquehanna, LLC
- PPL Montana, LLC

The PPL NERC Registered Affiliates are registered in six regions (MRO, NPCC, RFC, SERC, SPP, and WECC) for one or more of the following NERC functions: BA, DP, GO, GOP, IA, LSE, PA, PSE, RP, TO, TOP, TP, and TSP. In general, PPL supports the comments submitted by Edison Electric Institute (EEI) on behalf of its member companies.

1) Consider combining the 8 tables into one table using the format shown below. The current quantitative nature of the survey provides little value. Revising the format to Y/N responses will limit the resources required to obtain quantities of assets at LOW facilities. The Y/N response combined with the response to the exclusion question will provide information on scoping. This approach will prevent delays or redirection of resources focusing on High/Medium assets to Low assets. Additionally, we request NERC use one table per facility type (Control Center/Substation/Generation Plant) regardless of quantity or location of facility(ies). Completing one table of Cyber Assets per substation would be extremely time consuming at this point in our compliance program.

2) Please clarify the expected scope for Part 1, I a and Part 1, III a. e.g. Do you expect Distribution Control Centers to be included in the initial count? Do you expect generating assets that do not meet the BES Definition?

3) As stated previously, PPL is in the process of its CIP V5 transition project. Due to an increase in the number of CIP Cyber Assets and coordination with several support groups, PPL requests at least 70 days to complete the BES Cyber Asset Survey once issued in final form as stated in the draft survey document on p 26.

4) Because the work of identifying the assets is not likely to be complete as of the time the survey results would be due, set expectations on data accuracy. PPL has started its transition project to CIP V5 although we are not complete and as such the results are not finalized. Additionally, should the counts represent in service assets as of survey submittal date or a projected count as of compliance date of 4/1/2016?

5) Due to the sensitive nature of the data being requested, please provide detail on how the information will be submitted and protected in a confidential manner.

6) In the case of a DCS at a generating plant, do the individual cyber assets that make up the DCS also need to be identified in the table response? What is the correct response in the table for a generating plant with DCS BES Cyber Systems? Can the
quantity of cyber assets in the DCS be entered without the breakdown of cyber asset types? (affects the response to Part 1, III.b)

7) Please provide guidance on level of detail requested or a sample response to Part 2 questions.

8) Provide a completed example table(s). If separate tables exist, please include an example for each type, e.g. Control Center, Substation, and Generation Plant.

In response to the questions posed by NERC, PPL provides the following:

1) Please describe any additional equipment types that should be included in the tables in Part 1 of the Data Request? None identified.

2) Are the ranges for numbers of Cyber Assets provided in the tables in Part 1 of the Data Requests appropriate to capture useable data from the survey? No. PPL suggests a Yes/No response. See Item 1 above.
Proposed Sample Table for completion replacing individual tables in Part 1 of the BES Cyber Asset Survey

<table>
<thead>
<tr>
<th>Cyber Asset Type</th>
<th>Description (only required for Other)</th>
<th>Cyber Assets of this type that meets definition as High Impact BES Cyber Asset (Y/N)</th>
<th>Cyber Assets of this type that meets definition as Medium Impact BES Cyber Asset(Y/N)</th>
<th>Cyber Assets of this type that meets definition as Low Impact BES Cyber Asset (Y/N)</th>
<th>Non-BES Cyber Asset of this Type present (Y/N)</th>
<th>Are any instances of this non-BES Cyber Asset Type excluded ONLY based upon 15 minute exclusion? (Y/N)</th>
<th>If Yes to 15 minute exclusion, Explain why</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Server</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMI Workstation</td>
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<tr>
<td>Other</td>
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</tr>
</tbody>
</table>
Comments of
SCE
Request for Public Comment on Proposed Request for Data or Information
Survey Regarding the Scope of the Term “BES Cyber Asset”

Comments of Southern California Edison Company

NERC has proposed a Survey Regarding the Scope of the Term BES Cyber Asset (“proposed survey”) in order to meet FERC’s directive in Order 791 to collect information relating to the term “BES Cyber Asset.” Specifically, NERC proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk power system to submit data to “satisfy the Commission’s directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.”¹

Southern California Edison Company (“SCE”) does not believe that the proposed survey should be submitted to the NERC Board of Trustees for approval in its current form due to a number of concerns. SCE has concerns with the scope and demands imposed by the proposed survey. SCE believes that a sampling approach by NERC or an effort focused on the participants in the CIP Version 5 Pilot Study could yield equally useful information without the burden the proposed survey.

The Scope of the Proposed Survey is too broad for entities, such as SCE, who are diligently working to prepare for CIP Version 5.

The BES Cyber Asset Survey posted by NERC is an inventory-type survey that requires entities to count all cyber assets,² both in scope and out of scope of the Cyber Asset definition at control centers, transmission stations or substations, and generation plants. Not only must entities count all of their cyber assets, they must also identify the type of assets at each location in order to respond to the survey. To count and identify types of cyber assets, entities must first inventory all of their cyber assets (in and out of scope), apply CIP-002-5.1, and then count them by the asset type provided in the proposed survey tables. A survey that requires entities to count all of their cyber assets by asset type is an inventory-type survey. The Commission explicitly said in Order 791-A that it was not directing NERC to conduct an inventory-type survey.

Complying with the proposed survey will effectively require early compliance with CIP-002-5.1, as SCE will be responsible for counting all of its cyber assets, both in and out of scope of the Cyber Asset definition, within 70 days of issuance of the survey. The 70 day time period is insufficient, as the proposed survey does not ask entities to provide estimates of the number of cyber assets at control centers, transmission stations or substations, and generation plants but to provide actual counts and identify the counts by NERC-defined cyber asset type. SCE and all entities covered by the survey will be required to provide careful counts, as the survey notes that “NERC staff will further validate the data provided.” SCE will have to complete this survey with precision, even though CIP-002-5.1 is not enforceable until April 1, 2016 and the requirements for low impact Cyber Assets or Systems are not enforceable until April 1, 2017.

² Not just “Cyber Assets impacted by the 15-minute parameter.” Id.
The proposed survey under Section 1600 imposes a new obligation on all owners, operators, and users of the bulk power system. The requirements associated with counting low impact Cyber Assets or Systems is particularly concerning as CIP-003-5, Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Counting low impact Cyber Assets is not required by CIP Version 5, but is required by NERC’s proposed survey. The proposed survey also defines the types of Cyber Assets to count, which is specific to the proposed survey and not included in CIP Version 5.

The burden imposed by the proposed survey is significant. Although NERC estimates that the counting and subsequent categorization by the NERC-provided cyber asset types included in the proposed survey will require approximately 40 – 100 hours per entity, SCE believes that this estimate grossly understates the burden it will bear under the survey. In SCE’s experience inventorying several substations in preparation for compliance with CIP Version 5, SCE has found that each substation requires more than 100 hours of effort to conduct a preliminary inventory. As SCE has more than 100 substations to which this survey would apply, the scope of the survey is immense. SCE believes that the workload and costs for this survey to help the Commission understand the BES Cyber Asset is impractical and unduly burdensome.

The scope and burden of the proposed survey will also not help “other entities implementing CIP Version 5 in identifying BES Cyber Assets” as the Commission intended. Instead, the proposed survey will harm entities by requiring them to pull resources devoted to implementing CIP Version 5 to complete the proposed survey. After NERC submits the informational filing to the Commission, entities will have already invested resources on identifying BES Cyber Assets, which they may have to change based on the information filing NERC submits to the Commission. Requiring all registered entities to respond to the survey increases the burden to the bulk power system owners, operators, and users without a commensurate benefit to reliability.

The proposed survey will also produce a large amount of data for NERC to analyze, lists from over a thousand entities, each with hundreds to thousands of data points. Some, not all, of this data will be relevant. SCE does not believe that NERC will be able to process the data in a useful or accurate fashion in the time frame required by the Commission to respond to Order No. 791.

**SCE believes that NERC should use a sampling approach or focus on the Pilot Program participants for the Survey information.**

SCE has performed extensive inventories of five of its control centers and substations in order to determine how to apply CIP-002-5.1 and save the associated data. In performing these inventories, SCE used a team of four employees to inventory five different types of control centers and substations that it considered representative of SCE’s overall set of facilities.

Performing the inventory required more than three months of effort by the team performing the inventories and several weeks of effort from the SCE personnel analyzing and categorizing the assets identified in the five inventories. SCE developed policies and procedures based on this test program and is now planning to inventory as many as 15 of its substations each month for the next several months. The inventory effort will require hiring several teams of contractors in order to expedite the inventory process and to capture the inventories on High and Medium Impact facilities by the end of the year.

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SCE believes that NERC can gain the level of information FERC directed it to acquire through the review of results similar to those produced in the SCE test. SCE does not believe that most entities can provide high-quality, accurate information to NERC under the requirements of the NERC Survey in a 70-day timeframe.

As an alternative to sampling in a manner such as that performed by SCE, SCE supports EEI’s recommendation that NERC consider using the six CIP Version 5 Pilot participants to answer the Commission’s Order No. 791 questions, follow up with the program participants to validate their responses, and share with Registered Entities to gather additional feedback, including different approaches or concerns.

This option was expressly considered in Order No. 791-A, where the Commission said:

We clarify that Order No. 791 did not direct NERC to conduct and inventory-type survey of all Cyber Assets impacted by the 15-minute parameter. Instead the scope of the survey was left for NERC to determine. Order No. 791 intended that NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 in the required NERC informational filing. For example, NERC could use the participants in the pilot program, discussed above, as the basis for the survey.\(^4\)

We agree with the Commission’s suggestion and strongly recommend that NERC start with the pilot participants to explain:

1. specific ways in which entities determine which Cyber Assets meet the 15 minute parameter;
2. types of functions of Cyber Assets that meet the 15 minute parameter;
3. common problem areas with entities improperly designating BES Cyber Assets; and
4. feedback from each region participating in the implementation study on lessons learned with the application of the BES Cyber Asset definition.\(^5\)

The six volunteer responsible entities of the pilot program have already devoted resources “to work with NERC and the Regional Entities to implement the CIP Version 5 standards in an accelerated timeframe.” From October 2013 through June 2014, the participants focused on the technical solutions and processes needed to meet Version 5, which included facing “key issues, challenges, and potential resolutions relating to” implementing Version 5.

Notably, the questions proffered by the Commission are qualitative (not quantitative) in nature. Once this descriptive information is compiled and summarized by pilot participants, NERC could then conduct

\(^4\) Order No. 791-A at P 21 (2014).
a qualitative survey to obtain specific feedback on the responses to these questions from registered and regional entities. A qualitative survey targeted at obtaining feedback on answers to the Commission’s questions rather than the comprehensive data collection in the proposed survey will significantly reduce the burden on bulk power system asset owners, operators, and users. This alternative approach survey would address the Commission’s directive in Order No. 791, reduce the burden on registered entities, and thereby allow entities to more knowledgably focus on the actual implementation of CIP Version 5.

The pilot program responses to the Commission’s questions from Order No. 791, compiled and summarized by NERC, will not only reduce the burden on entities, but will provide a useful resource to help them identify BES Cyber Assets as they implement CIP Version 5. Focusing on the Commission’s questions will also improve the quality of the responses to NERC. This approach also supports the Commission’s intent explicitly expressed in Order No. 791: “This filing should also help other entities implementing CIP Version 5 in identifying BES Cyber Assets.”

**Conclusion**

In conclusion, SCE strongly encourages NERC to focus its efforts on the CIP Version 5 Pilot Participants in order to answer FERC’s questions relating to the BES Cyber Asset definition. NERC will be able to use its relationships with the CIP Version 5 Pilot Participants to gather information quickly and then use this information to report back to the Commission, as directed, regarding the efficacy of the 15-minute parameter and other aspects of the BES Cyber Asset definition.

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6 Id.
Comments of
Southern
Southern appreciates NERC posting its proposal to collect information requested in Order 791 and allowing the opportunity to submit comments on the BES Cyber Asset survey.

Southern supports the comments submitted by EEI and agrees that the survey should not be presented to the NERC Board of Trustees due to the key concerns of: 1) the scope of the survey is unnecessary to respond to the FERC directive, 2) it imposes a significant burden, and 3) the survey is unclear.

In addition to those comments, Southern offers several other areas for consideration:

- Southern believes the 15-minute parameter is a good proxy for identifying systems that can affect real-time operations.
  - Our experiences to date while performing the categorization process for BES Cyber Assets support the 15-minute parameter.
  - Impacts are rather immediate or extend into hours/days/weeks. For example:
    - The starting station service transformers at a generating plant have an immediate impact on operations if this system is unavailable, degraded or misused.
    - The fuel handling system at a generating plant could run for several hours (at a minimum) if that system is unavailable, degraded or misused.

- The burden of completing the survey was vastly underestimated by NERC.
  - Even with the guidance given in the recently posted BES Cyber Survey Frequently Asked Questions (“FAQ”) document, Southern will need to complete over 200 tables to respond to the survey questions.
    - The substations that contain low impact BES Cyber Assets are instructed to complete a single table that represents the collective group of substations but the generating plants that contain low impact BES Cyber Assets are instructed to complete a table for EACH plant location. This distinction seems at odds with the concept of not requiring an inventory of low impact BES Cyber Assets.
  - This will detract from the far more important efforts underway to continue the implementation of CIP Version 5.

- Southern is also concerned that this information will be confusing, open to many different interpretations that could be misleading or incorrect and will not answer the 4 questions posed by FERC in Order 791.
  - It is appreciated that NERC clarified in the FAQ that exact numbers were not required for an entity to complete the tables but how will an entity know what does or does not have a 15-minute impact without putting forth the effort to determine what systems they have and the impact of those systems?
  - Another concern is that an “analysis” approach from this information could be that one would simply try to take the difference in two impact tables (i.e., a table that meets the definition of BES Cyber Asset and the corresponding table that shows those items that do NOT meet the definition of BES Cyber Asset for that facility) as an indicator of what is not included based on the 15-minute criteria. This resulting data will not necessarily be
a correct indication of the assets that may impact operations but take longer than 15-
minutes to do so. This result will include the number of cyber assets that have no
impact on operations in addition to the cyber assets with an impact greater than 15-
minutes. This will be a very misleading number.

While it is understood that the ranges in the tables were provided to help with
combining certain subsets of cyber asset data, it once again could result in very
misleading data or data that isn’t useful. For example, an entity puts an “X” in the 1000-
2999 range box for a cyber-asset that does not meet the definition of BES Cyber Asset.
In the corresponding box on the table for a cyber-asset that does meet the definition of
a BES Cyber Asset, an entity puts an “X” in the 500-999 range box. If the actual number
was 1001 cyber assets and only 3 of them were not BES Cyber Assets (causing the “X” in
the 500-999 range box), the information gives the appearance of a much greater
difference when in reality, it was a very small.

- The descriptive narrative that would indicate examples of devices that don’t
meet the definition of BES Cyber Asset would be a less confusing source for this
information.

In closing, Southern appreciates NERC providing the industry the opportunity to offer feedback on the
scope of the proposed survey.
Comments of
United Illuminating Company
Request for Public Comment on Proposed Request for Data or Information
Survey Regarding the Scope of the Term “BES Cyber Asset”

Comments of the United Illuminating Company

The United Illuminating Company (“UI”) is submitting these these comments on the proposed Survey
Regarding the Scope of the Term BES Cyber Asset, dated May 30, 2014, in response to specific directives
of the Federal Energy Regulatory Commission.

UI concurs with the comments submitted by EEI. We are submitting this comment to emphasize the
benefit of the alternate proposal by EEI. The qualitative survey will allow Registered Entities to compare
the results of their BES Cyber Asset determinations. By identifying differing results, for example one
Entity includes a meter where UI did not, it would provoke a process to identify the basis of the differing
results. UI can predict that differences will become evident and sometimes would be justified based on
BES Reliability Operating Services (“BROS”) supported and sometimes not. This will be a challenge for
NERC when processing survey responses since NERC will need to explain these differences.

If NERC does agree to a qualitative survey then UI can offer this information. If UI was designing this
survey we would have used an Excel spreadsheet that asked the questions below and also the BROS
provided. We would pre-populate the type of cyber asset to be assessed and ask each Entity to
complete the assessment. Then each spreadsheet could be imported into a database. Once in a
database reports and queries could be constructed to retrieve and compare responses.

In performing an exercise in qualitative assessment it became apparent that the primary driver of
inclusion or exclusion as a BES Cyber Asset was based on the qualities of:

- Does the cyber asset provide protection to a BES element (relays)?
- Does the cyber asset control a BES element (remote breaker control and local control)?
- Does the cyber asset provide situational awareness/monitoring for operating the BES (input to
  EMS, Contingency Analysis, Real time System Operation)?

If any of the above is Yes then ask the 15 minute question. Ignore redundancy, and consider the
situation occurs during N-1, or N-1-1 contingency.

- Would the cyber asset if rendered unavailable would, within 15 minutes of its required
  operation, misoperation, or non-operation, adversely impact one or more Facilities,
  systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable
  when needed, would affect the reliable operation of the Bulk Electric System. Redundancy
  of affected Facilities, systems, and equipment shall not be considered when determining
  adverse impact.

- Would the cyber asset if rendered degraded would, within 15 minutes of its required
  operation, misoperation, or non-operation, adversely impact one or more Facilities,
  systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable
  when needed, would affect the reliable operation of the Bulk Electric System. Redundancy
  of affected Facilities, systems, and equipment shall not be considered when determining
  adverse impact.

- Would the cyber asset if misused would, within 15 minutes of its required operation,
  misoperation, or non-operation, adversely impact one or more Facilities, systems, or
  equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed,
  would affect the reliable operation of the Bulk Electric System. Redundancy of affected
  Facilities, systems, and equipment shall not be considered when determining adverse
  impact.

A sample completed survey for illustration is attached. Since the pilot participants may have the most
comprehensive inventory of types of cyber assets included or excluded NERC may want to consider
using that list to populate the “Cyber Asset Type” column.

Thank You for reviewing these comments.

Jonathan Appelbaum
Director, NERC Compliance
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180 Marsh Hill Rd
Orange, CT 06477-3629
Office: 203-499-2645
Email: jonathan.appelbaum@uinet.com
<table>
<thead>
<tr>
<th>Item</th>
<th>Cyber Asset Type</th>
<th>Function</th>
<th>Protects controls \ monitor</th>
<th>Type of Element</th>
<th>Comments on Cyber Asset and Function</th>
<th>Reliability service provided. See CIP-002-5 Guideline</th>
<th>Reliability Service Provided?</th>
<th>If rendered <strong>unavailable</strong>, would it within 15 minutes of the cyber asset required operation, misoperation, or non-operation adversely impact one or more Facilities, systems, or equipment which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of</th>
<th>If <strong>misused</strong>, would it within 15 minutes of the cyber asset required operation, misoperation, or non-operation adversely impact one or more Facilities, systems, or equipment which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of BES CYBER ASSET? (auto-calculate)</th>
</tr>
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<tbody>
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<tr>
<td></td>
<td>Breaker Management Relays</td>
<td>Monitors trip coil (closed circuits)</td>
<td>M</td>
<td>Transmission breakers 100kV and above</td>
<td>Closed circuits</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td></td>
<td>Breaker Failure Protection</td>
<td>P</td>
<td>Remote Trips</td>
<td>Dynamic Response</td>
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<td>Yes</td>
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<tr>
<td></td>
<td>Automatic Reclosing; synchronizing all permissive closing and checks</td>
<td>C</td>
<td></td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td></td>
<td>Line Automation</td>
<td>C</td>
<td>N-1 if misused</td>
<td>Dynamic Response</td>
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<tr>
<td></td>
<td>Independent pole disagreement tripping of breakers</td>
<td>P</td>
<td></td>
<td>Monitorin g and Control</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>Monitors critical breaker status to SCADA</td>
<td>M</td>
<td>TOP/RC</td>
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<td>No</td>
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<td>2</td>
<td>Transformer Protections</td>
<td>Current differential protection</td>
<td>P</td>
<td>Transformers 100kV and 115kV to 13.8kV</td>
<td>Dynamic Response</td>
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<td>Yes</td>
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<td>No</td>
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<td>Directional Comparison Blocking (DCB) Scheme</td>
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<td>Transmission lines 100kV and above</td>
<td>Depends for Misused</td>
<td>Dynamic Response</td>
<td>Yes</td>
<td>Yes</td>
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<td>Sudden pressure</td>
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<td>Dynamic Response</td>
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<td>Yes</td>
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<td>Overcurrent element protection</td>
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<td>Inrush restraint (Differential scheme)</td>
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<td>Permissive Over-Reaching Transfer Trip (POTT)</td>
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<td>Dynamic Response</td>
<td>Yes</td>
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<td>Ground directional overcurrent protection</td>
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<td>Direct transfer trip</td>
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<td>Stub bus</td>
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<td>Dynamic Response</td>
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<td>Switch on to fault</td>
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<td>Dynamic Response</td>
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<td></td>
<td>Line Monitoring for Telemetry</td>
<td>Monitors line for Telemetry</td>
<td>M</td>
<td>Transmission Lines 100kV and above</td>
<td>High resolution voltage &amp; current transducer</td>
<td>Situation Awareness</td>
<td>Yes</td>
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<td>9</td>
<td>Annunciators</td>
<td>Local Monitoring and repeat to SCADA of Alarms</td>
<td>M</td>
<td>Transmission Lines 100kV and above</td>
<td>All alarms in station</td>
<td>Situation Awareness</td>
<td>Yes</td>
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<td>10</td>
<td>Transformer and Reactor CT/LTC Monitoring and Control</td>
<td>Control Transformer and Reactor CT/LTC</td>
<td>C</td>
<td>Transformers 100kV and above high side windings and reactors</td>
<td>Controlling Voltage</td>
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<td>Yes</td>
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<td>Monitoring Transformer and Reactor CT/LTC</td>
<td>M</td>
<td>Transformers 100kV and above high side windings and reactors</td>
<td>Situation Awareness</td>
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<td>11</td>
<td>Transformer Gas Monitors</td>
<td>Monitors Gas DGA</td>
<td>M</td>
<td>Transformers 100kV and above</td>
<td>Health data</td>
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<td>12</td>
<td>Bushing Monitors</td>
<td>Bushing monitoring</td>
<td>M</td>
<td>Transformers 100kV and above</td>
<td>Health data</td>
<td>No</td>
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<td>13</td>
<td>Emergency Generator Controls</td>
<td>Monitors the status (on/off, speed, power, volts etc.) of the generator and alarm for variety of abnormal conditions</td>
<td>M</td>
<td>3rd/4th contingency backup to the power source to all protection</td>
<td>No</td>
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<td>14</td>
<td>Overcurrent/Overload Scheme</td>
<td>Breaker Control, protection against line overloads (Runback relays)</td>
<td>PC</td>
<td>transmission s elements 100kV an above</td>
<td>SPS - won’t cause cascade</td>
<td>Dynamic Response</td>
<td>Yes</td>
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<td></td>
<td>Generator Rejection (Runback Relays), protection against line overloads</td>
<td>PC</td>
<td>transmission s elements 100kV an above</td>
<td>SPS - won’t cause cascade</td>
<td>Dynamic Response</td>
<td>Yes</td>
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<td>15</td>
<td>Revenue Meter</td>
<td>Revenue monitoring - watt-hour meter</td>
<td>M</td>
<td>transmission s elements 100kV an above</td>
<td>Data for Meter dept only</td>
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<td>16</td>
<td>Battery Charger</td>
<td>Monitors AC in/DC out, charges the batteries</td>
<td>M</td>
<td>DC Battery system</td>
<td>Connected to Network, Monitoring only</td>
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<td>17</td>
<td>Thermo-couple meter</td>
<td>Monitors the ground temperature</td>
<td>M</td>
<td>Temperature Monitoring system</td>
<td>Monitor temperature of Earth</td>
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<td>Volt Meters</td>
<td>Monitors batteries</td>
<td>M</td>
<td>DC Battery system</td>
<td>Monitor only</td>
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<td>19</td>
<td>Data Concentrators</td>
<td>Controls and Monitors BES elements</td>
<td>CM</td>
<td>transmission s elements 100kV an above</td>
<td>SCADA</td>
<td>Yes</td>
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<td>20</td>
<td>HMI</td>
<td>Controls BES elements</td>
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<td>Monitorin g and Control</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>21</td>
<td>Network Terminals (RTU/NTU) (serial/IP)</td>
<td>Controls BES elements</td>
<td>C</td>
<td>transmission elements 100kV an above</td>
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<td>Monitors BES elements</td>
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<td>Network Time Servers (GPS)</td>
<td>GPS Clock</td>
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<td>transmission elements 100kV an above</td>
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<td>GPS Clock</td>
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<td>ICCP Servers</td>
<td>Inter-control Center Communications Gateway</td>
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<td>transmission elements 100kV an above</td>
<td>Managing Constraint s</td>
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<td>SCADA Workstations</td>
<td>Controls and Monitors SCADA</td>
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<td>Security Control And Data Acquisition</td>
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<td>Security Control And Data Acquisition</td>
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<td>SCADA Tape Library Servers</td>
<td>SCADA Tape Library Server, used for backup tape generation</td>
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<td>transmission s elements 100kV an above</td>
<td>Records data</td>
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<td>Color Laser Printers</td>
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<td>SCADA Terminal Thin Client Server</td>
<td>SCADA Terminal Thin Client Server, Monitors SCADA data</td>
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<td>Display Controller</td>
<td>Blends all projectors onto single display</td>
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<td>13.8kV Feeder monitoring</td>
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<td>34</td>
<td>Physical Security-Door locks on control house</td>
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Comments of NVE
Request for Public Comment
Proposed Request for Data or Information Survey
Regarding the Scope of the Term “BES Cyber Asset”

Comments of NV Energy

NV Energy, a wholly owned subsidiary of Berkshire Hathaway Energy, is pleased to submit these comments on the proposed Survey Regarding the Scope of the Term BES Cyber Asset, dated May 30, 2014, in response to specific directives of the Federal Energy Regulatory Commission (“FERC” or “Commission”). NV Energy encompasses two operating companies, Nevada Power Company and Sierra Pacific Power Company, who are each registered entities for a considerable number of reliability functions under the North American Electric Reliability Corporation (“NERC”) Functional Model, and will have an obligation for compliance with the Version 5 NERC CIP Standards.

The Survey Regarding the Scope of the Term BES Cyber Asset (“Proposed Survey”) is the mechanism NERC has proposed to use to collect the information directed by the Commission. Specifically, NERC proposes to use Section 1600 of the NERC Rules of Procedure to require owners, operators, and users of the bulk power system to submit data to “satisfy the Commission’s directive to conduct a survey of responsible entities on the scope of the term ‘BES Cyber Asset’ and to collect the data necessary for the informational filing.”

We believe that the Proposed Survey, in its current form, should not be submitted to the NERC Board of Trustees owing to a number of concerns. The following comments describe these concerns with the Proposed Survey. While we find the Proposed Survey to be problematic as written, we are confident that there are alternatives that will nonetheless satisfy the directives of the Commission. To that end, we encourage NERC to adopt the alternative approach put forward by Edison Electric Institute (“EEI”), which can be found in “Part 2” of the EEI comments to this Proposed Survey. This approach will reduce the burden to responsible entities and NERC itself and will provide the information that the Commission is seeking.

1. NERC’s proposed survey is not needed to respond to the Commission’s Order No. 791 directive

The proposed survey requires entities to inventory all of their cyber assets, which is not required for NERC to respond to the Commission’s Order 791 directive. Order No. 791 did not direct NERC to conduct an inventory-type survey or to use NERC Rules of Procedure Section 1600, which, once approved by the NERC Board of Trustees, makes the survey mandatory for all owners, operators, and users of the bulk power system registered on the NERC Compliance Registry.

The Commission clarified in Order No. 791-A that Order No. 791 does “not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter.” Therefore an inventory-type survey will not be necessary for NERC to meet its Order 791 obligations. Order No. 791-A suggests by example that NERC could use the pilot program participants “as the basis for the survey.”

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2 Order No. 791-A at P 21 (2014).
The Proposed Survey is a detailed inventory-type survey that would require entities to count all cyber assets – both in scope and out of scope of the BES Cyber Asset definition – at control centers, transmission stations or substations, and generation plants. To complete the survey, entities must necessarily count all of their cyber assets, apply the BES Cyber Asset definition to each cyber asset, apply the CIP-002-5.1 Attachment 1 impact rating criteria, and identify the type of assets at each location.

2. *The proposed survey creates a new obligation and requires early compliance with CIP-002-5.1, which will impose a significant burden on entities rather than help them implement CIP version 5 as the Commission intended in Order No. 791*

The proposed survey requires early enforcement of CIP-002-5.1. As mentioned above, the use of NERC Rules of Procedure Section 1600 makes responding to a data or information request mandatory for all owners, operators, and users of the bulk power system. Counting all cyber assets—in and out of scope of the Cyber Asset definition—effectively requires entities to apply CIP-002-5.1 within 70 days of issuance of the survey, which is expected in August upon approval by the NERC Board of Trustees. The 70 day time period appears to be insufficient, as the proposed survey does not ask entities to provide estimates of the number of cyber assets at control centers, transmission stations or substations, and generation plants but to provide actual counts and identify the counts by NERC-defined cyber asset type.

The steps required to complete the proposed survey, and the fact that the survey would be mandatory under Section 1600, imposes a new obligation for all owners, operators, and users of the bulk power system. Counting all low impact cyber assets that meet and do not meet the BES Cyber Asset definition is a particular concern as CIP 003 Requirement 2 specifically notes: “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Counting low impact cyber assets is not required by CIP version 5, but is required by NERC’s proposed survey. The proposed survey also defines the types of cyber assets to count, which is new and specific to the proposed survey and a part of CIP version 5.

Standard CIP-002-5.1 Requirement 1.3 only requires that entities “identify each asset that contains a low impact BES Cyber System according to Attachment 1, Section 3.” The standard also specifically states that “a discrete list of low impact BES Cyber Systems is not required.” An entity is not required by CIP-002-5.1 to identify and assess every cyber asset associated with a low impact asset. However, the proposed survey would require entities to identify, assess, and inventory all of the cyber assets at low impact cyber assets, which imposes a new burden on entities that is not also required by the standard.

It appears that the scope and burden of the proposed survey will not assist “entities implementing CIP version 5 in identifying BES Cyber Assets” as the Commission intended. Instead, the proposed survey may actually hamper these entities by requiring them to divert resources devoted to implementing CIP version 5 toward completing the proposed survey instead.

3. *The proposed survey is unclear, which will increase the burden for entities to respond to the survey and make it difficult for NERC to accurately respond to the Commission in an informational filing*

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The Proposed Survey is flawed because the survey tables assume that control centers, transmission stations or substations, and generation plants will be identified as low, medium, high impact. However, these assets may actually have a mix of assets and systems of differing impact ratings. The survey tables require impact rating categorization at the control center, transmission station or substation, and generating plant level; however, CIP-002-5.1 Attachment 1 is focused on categorization at the BES Cyber System level.

The proposed survey refers to locations of operating elements under the control center section, but does not define what a separate location means. For example, are operating elements in the same location if they are in the same room, same building, or same premise?

The survey should also be limited to Cyber Assets that are associated with the bulk power system and subject to the CIP Standards. The proposed survey requires counting cyber assets that meet, as well as those that do not meet, the BES Cyber Asset definition; it is therefore unclear whether every programmable electronic device should be counted in the survey.

These ambiguities make it burdensome for entities to respond and will also make it difficult for NERC to interpret the survey results as each entity could interpret the request differently.

Finally, the Proposed Survey will also produce a large range of information for NERC to analyze and validate. NERC will receive responses from over one thousand entities, which will yield thousands of tables containing cyber asset counts. Some, but certainly not all, of this data will be relevant or meaningful. The function descriptions that accompany these tables are likely to vary in detail and format, which will increase the burden on NERC to assess and interpret these responses. We do not believe that NERC will be able to process the data in a useful or accurate fashion in the time frame required by the Commission to respond to Order No. 791.

Conclusion

In conclusion, we strongly encourage NERC to consider the proposed alternative advanced by EEI in “Part 2” of their comments. We do not support submittal of the Proposed Survey to the NERC Board of Trustees for approval in its current form. Rather than burdening all owners, operators, and users of the bulk power system to engage in the data collection compelled by the Proposed Survey, NERC should take the opportunity, as suggested by the Commission in Order No. 791a to facilitate common understanding of the BES Cyber Asset definition and then use this information to report back to the Commission, as directed, regarding the efficacy of the 15-minute parameter and other aspects of the definition.
Comments of TANC
July 14, 2014

North American Electric Reliability Corporation
3353 Peachtree Road, N.E.
Suite 600, North Tower
Atlanta, GA 30326

Subject: Response to NERC Proposed Survey Regarding Scope of the Term “BES Cyber Asset”

TANC appreciates NERC’s efforts to develop a survey regarding the scope of the term “Bulk Electric System (BES) Cyber Asset” in response to a directive from the Federal Energy Regulatory Commission’s (FERC) Order 791. This letter conveys TANC’s general support for the comments submitted to NERC by the Western Interconnection Compliance Forum (WICF) and emphasizes concerns expressed therein regarding the burden that the proposed survey would impose upon the industry.

We believe that NERC has significantly underestimated the length of time required to complete the survey as proposed. The estimated duration of 40 hours for smaller entities and 100 hours for larger entities appears to not fully consider the number of personnel involved in the evaluation given the wide range of facilities and cyber asset types that are potentially in scope of NERC’s Critical Infrastructure Protection (CIP) Version 5 cyber security standards.

TANC strongly supports WICF’s recommendation that NERC use one or more sampling techniques rather than requiring every entity to evaluate each of its control centers, transmission stations/substations, and generation plants. It is likely that survey responses from a subset of all entities and/or facilities in scope of the CIP Version 5 cyber security standards will still provide meaningful information to NERC while reducing the industry-wide burden.

TANC recognizes the challenges NERC faces in its efforts to develop an effective and efficient survey that will inform NERC’s response to FERC. We appreciate NERC’s efforts to date on this important matter.

Sincerely,

Eric Olson
Reliability Standards and Compliance Manager
Comments of

TVA
1. The Registered Entity suggests the survey be revised to request registered entities to identify candidate Cyber Assets for which application of the 15 minute parameter was the determining factor in non-selection as BES Cyber Assets.

2. The level of effort required to develop responses for High, Medium, and especially Low Impact assets is significant. The Registered Entity suggests that response for Low Impact assets be based on a sampling of those assets rather than entire inventory.
Comments of EDP
Comments on Proposed BES Cyber Asset Survey

Categorization
1. Is a windfarm reporting as a substation or a generation plant? Do we have to do the substation table for substations and then windfarms as generation plant?
2. Does the data request cover each turbine, since they are non-BES Cyber assets, but part of the Generation Plant with Cyber Assets (i.e. PLC, switches, etc. in turbine)?
3. Given the definition of a BES Cyber Asset, is the substation a BES Cyber asset or not?
4. Given the definition of a BES Cyber Asset, is the turbine a BES Cyber asset or not?
5. Given how our current network redesign is planned for the substations and O&M’s, how would the equipment in each be defined?
6. Where would a fire suppression system fall into this categorization? Is a fire suppression system a protected asset since it uses some of the protocols listed, is in the substations and PSPs? Is it other?

Line Item Lists
1. There is not a good identifier for Virtualization Hardware and Operating Systems.
2. Are items such networked Power Distribution Units included? In Other?
3. Development and test should be its own table. It should have all the same equipment lines and be designated as a test control center.

General
1. NERC should focus on what is specifically called out by FERC order 791 in paragraph 124. This survey appears to extend beyond the items identified within paragraph 124.
2. NERC should consider sampling registered entities for this information. Reference was made to using participants in the pilot program as a basis for the survey.
3. NERC should consider focusing the survey on BES Cyber Systems. Several of the device types requested to be inventoried are not what would be considered a BES Cyber Asset. In its current format the data provided may be inconsistent.
4. NERC should consider the timing of the survey in relation to the implementation plan for CIP version 5.
5. NERC should consider the resource expectations for completing the survey as most feel the estimates are incorrect.
6. NERC should consider removing Low Impact Bes Cyber Assets and Low Impact facilities from this survey.
Comments of Cleco
July 14, 2014

BES CYBER ASSET SURVEY COMMENTS

Cleco’s is concerned that although NERC will not require an inventory list of devices within all of the low impact stations, the effort required to categorize these assets as to whether they meet the 15 minute impact threshold will create a burden since the function of these devices can vary from one substation to another. Also, Cleco currently doesn’t have dedicated resources to collect this information, but rather, this work must be done in conjunction with normal job duties. Although NERC may see this as a one-time data request, Cleco is also dealing with other data request such as order 754, numerous NERC standard revisions, as well as compliance initiatives such as PRC-025. Cleco is also dealing with the impact of securing new medium cyber assets on our system in preparation of version 5 effective date. Cleco feels it would be more practical to extend the response time from 70 days to 270 days. While this may seem like a drastic increase, Cleco feels this time is required for a more thorough assessment.
Comments of
Idaho Power
**Question 1:** Please describe any additional equipment types that should be included in the tables in Part 1 of the Data Request.

The CIP standards have exemption 4.2.3.2 which states “Cyber Assets associated with communication networks and data communication links between discrete Electronic Security Perimeters.” However, there have been other configurations besides “discrete” ESPs that have been proposed and potentially acceptable by different industry and regulator groups. Not using a discrete ESP and with a defined access point could potentially bring some communication network components into consideration for applicability with the CIP standards. These devices may need to be considered as a category for this survey. Additionally, electrical utility owned communications electronics (i.e. microwave radios, multiplexers, routers, switches, etc.) that are elements of the communications infrastructure used to interconnect the Control Centers, transmission stations or substations, and generation plants should be considered for inclusion in the tables. These communications electronics are located at not only the Control Centers, transmission stations or substations, and generation plants, but also at remote communications sites (i.e. mountaintop microwave radio sites, fiber regeneration stations, etc.). The communications sites are important to the reliable operation of the grid.

The survey has a category for “Locally Mounted Physical Security” however this is in the context of “Cyber Assets that meet the Definition of BES Cyber Asset at….” Control centers and transmission substations and stations however this is very unclear. In what way can Locally Mounted Physical Security devices or hardware be BES Cyber Assets? All devices by definition that are PACS or associated with the PACS are not classified as BES Cyber assets. These categories do not appear to be appropriate for this BES asset portion of the survey.

**Question 2:** Are the ranges for numbers of Cyber Assets provided in the tables in Part 1 of the Data Requests appropriate to capture useable data from the survey?

The main concerns with the survey derive from the point that there is specific information being requested like unto an inventory of cyber asset and BES Cyber Assets at Low Impact assets. By taking this approach the survey is requesting more information than is going to be required by the CIP-002-5.1 standard itself in which only a list of Low Impact asset needs to be identified. It seems onerous to expect the industry to complete the survey with more administrative overhead than is required to meet the compliance requirements of the standards themselves. It also seems unclear what further information would be obtained or questions answered by gathering the same information about Low Impact assets as is being gathered around High and Medium Impact assets. The scope of the survey should be limited to cyber assets and BES Cyber Assets located at High and Medium Impact assets.
Comments of
Luminant Energy Company
Luminant Energy Company, LLC appreciates the opportunity to provide comments on the BES Cyber Asset Survey.

Luminant Energy Company, LLC supports the comments submitted by EEI in response to the draft BES Cyber Asset Survey.

Additionally, upon review of the BES Cyber Asset Survey and FAQ that NERC has provided, we believe that the direction described in the FAQ is progress in the right direction to appropriately gather cyber asset data and attempting to avoid an excessive data request. Further development on the survey direction is needed to however to address the FERC directive without introducing an unnecessary burden on industry. Once a final direction is established for the survey, the survey language should be revised to convey that specific intent so that all entities can have a clear understanding of how to appropriately respond.
Comments of Luminant Power
The NERC Registered Entities Luminant Generation Company LLC, Big Brown Power Company LLC, Oak Grove Management Company LLC, Valley NG Power Company LLC and Sandow Power Company LLC (collectively referred to as Luminant Power) thank you for the opportunity to provide comments on the proposed BES Cyber Asset Survey. Luminant Power supports the attached comments submitted by EEI in response to the draft BES Cyber Asset Survey. Additionally, upon review of the BES Cyber Asset Survey and FAQ that NERC has provided, we believe that the direction described in the FAQ is progress to more appropriately gather cyber asset data and avoid an excessive data request. However, further development on the survey is needed to address the FERC directive without introducing an unnecessary burden on industry. Any final survey language should be revised to convey very specific intent so that all entities can have a clear understanding of how to appropriately respond. Please contact me with any questions.
Comments of
Cuyahoga Falls Electric Department
Listed below are comments on the following definition for a BES Cyber Asset...
A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems. (A Cyber Asset is not a BES Cyber Asset if, for 30 consecutive calendar days or less, it is directly connected to a network within an ESP, a Cyber Asset within an ESP, or to a BES Cyber Asset, and it is used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.)

Comments:

- The definition uses the word "misoperation", which confuses the definition. The use of "misoperation" is not appropriate here because when is there ever a "required misoperation" as this definition suggests?
- Even taking out the word "misoperation" the definition is still confusing. I'd need a definition for the definition to make sure I understand it and I am an electrical engineer whose specialty is reliability.
- I believe redundancy should be considered when determining adverse impact on the BES, if that redundancy means a particular failure will NOT adversely impact the BES. Redundancy IS a strategy for reliability. Thus, it is confusing as to why it is being asked to dismiss redundancy in this definition.
- The part in parentheses is confusing. "A Cyber Asset is not a BES Cyber Asset if,...it is directly connected to a BES Cyber Asset"???
Comments of
Iberdrola Renewables, LLC
I am writing in response to the proposed BES Cyber Asset Survey open for comment through 7/14/2014. As a GO/GOP of distributed power, we have 35 NERC registered facilities across the U.S. The proposed survey requires an explicit inventory of all BCS at low impact facilities. The proposed survey contradicts the requirements of low impact according to the CIP V5 SDT webinar on 6/19/2014. The SDT stated that an inventory at low impact sites will not be required for Version 5 compliance. An explicit inventory is a huge undertaking and will far exceed the projected 100 hours in the project proposal. Due to our geographical coverage, this will require an extraordinary amount of resources to compile. The cost will be significant and at the end of the day not required for Version 5 compliance. It is important that we voice our concerns regarding the complexities and significant cost to our organization.
Comments of
Madison Gas & Electric
I am submitting the following comments on behalf of Madison Gas & Electric.

- Has NERC considered engaging CIP-5 pilot participants to collect the information needed to respond to Order 791? As early adopters, pilot participants have real-world experience implementing CIP-5 that makes them uniquely qualified to provide feedback on the effect of the 15-minute parameter.
- The scope of the survey is not in-line with FERC Order 791 or 791-A, and as written would be a burden beyond the projected 40 to 100 hours. Due to limited resources and the fact that assets are geographically dispersed, the effort to list, count and categorize in-scope and out-of-scope Cyber Assets would significantly impact day-to-day activities and does not support reliability goals.
- The inventory structure of the survey is in direct conflict with FERC Order 791-A which states: "We clarify that Order No. 791 did not direct NERC to conduct an inventory-type survey of all Cyber Assets impacted by the 15-minute parameter."
- The extent of the information requested in the survey exceeds the NERC mandate to answer the four questions in Order 791, paragraph 124. As stated in FERC Order 791-A, paragraph 21, the intent of Order 791 was that "NERC develop a survey of sufficient scope in order to respond to the questions posed in Order No. 791 . . ." These questions seek to identify the ways entities determine which assets meet the 15-minute parameter, the types or functions that do not meet the Cyber Asset criteria and why, problem areas related to improper designation, and lessons learned related to application of the definition. None of these questions require the counting and categorizing of assets. It would be more efficient to pose these questions directly to pilot participants instead of using the broad inventory structure in the survey.
Comments of

VMEU
The City of Vineland (VMEU) is a Registered Entity with the functions of DP, LSE, and PSE. We are a generation and distribution facility. We are no longer a GO/GOP after removal of our Blackstart unit effective 1-1-13.

For the survey, are we only obligated to fill in the sections based on our functional applicability or for all three sections?
Comments of
SDG&E
San Diego Gas & Electric (SDG&E) has concerns with questions asked in part 1 of the NERC BES Cyber Asset Survey. SDG&E believes providing a count of the Cyber Assets by impact criteria at each Control Center, transmission substation, and generation plant would require diverting personnel, that are vital to the CIP version 5 implementation processes, to the inventory of Cyber Assets at BES facilities. SDG&E believes that the survey would capture the same information if it asked entities to provide a representational listing of assets at a Control Center, transmission substation, and generation plant and then extrapolated that sample to the number of Control Center, transmission substation, and generation plants that entities have identified. Furthermore, SDG&E believes that an inventory of cyber assets at low impact facilities should not be included in the survey due to the ambiguities of NERC requirements for low impact facilities.
Comments of TAL
The City of Tallahassee (TAL) believes the estimate provided regarding the relative burden imposed on the reporting entities to accommodate the information request is greatly underestimated.

Entities need adequate time to dedicate resources toward identifying and quantifying the low impact assets at generating stations and substations. This will be the bulk of TAL’s efforts in fulfilling the survey requirements. For example, for DCS equipment at generating stations, TAL will need to include modules, processors, communications relays, and other sub-components that control the plant and allow operators at HMI interfaces to manipulate the plant. The time it will take to quantify a response for this asset type alone is significant, not to mention the other 20 categories.

For each cyber asset that does not meet the 15-minute impact threshold, entities must describe its function and the rationale for not including it as meeting the impact threshold. Entities must also describe why certain assets or asset functions are excluded from the critical defining factor for reasons other than not meeting the impact threshold.

This may not be very difficult to accomplish at control center facilities; however, at transmission substations and generating stations, it could be a significant undertaking to complete without a given selection of predefined criteria to use in response. No obvious selection criteria are offered. Without these, the answers to these questions could mistakenly expand the definition of a BES Cyber Asset to include all assets. Attachment 2 provides no example for transmission or generating facilities.
Comments of
National Grid
Please see attached comments from National Grid.

1. Survey time estimates 100 hours seems low for large entities with a large number of sub-stations. Entities would need sufficient time to compile this data. Neither CIP Version 5 Reliability Standards nor the survey requires entities to have an inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets. FERC approved CIP-003-5 – Security Management Controls does not require the entity to maintain an inventory list of “Low” BES Cyber Systems. Therefore, the BES Cyber Asset survey should exclude “Low” from the data request. The process to provide even an approximate number of assets in lows would be a time consuming process.

2. FERC approved CIP-003-5 – Security Management Controls does not require the entity to maintain an inventory list of “Low” BES Cyber Systems. Therefore, the BES Cyber Asset survey should exclude “Low” from the data request.

3. Concern that this is before compliance enforcement date. Due to lack of maturity in the application of BES Cyber System/Asset due to 24-month implementation plan (April 2016) it does not allow entities sufficient time to answer the BES Cyber Asset survey accurately.

4. Concern that the survey targets industry and not the transition group. Suggested that the survey use the transition study group. The transition study group is further along in the BES Cyber System definition process and could provide accurate data for the survey.

5. Concern with actual numbers of devices and recommend category include/exclude.

6. Information may be market-sensitive and outside of NERCs purview.
Comments of
Wisconsin Electric Power Company
Wisconsin Electric Power Company participated in the development of, and supports the comments submitted by Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) Working Group.
Comments of FirstEnergy
FirstEnergy supports the “Comments of the Edison Electric Institute” in response to the Request for Public Comment of Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”
Comments of
IMEA
Illinois Municipal Electric Agency (IMEA) supports comments submitted by Farmington Electric Utility System.

Illinois Municipal Electric Agency (IMEA) supports the joint comments submitted by the American Public Power Association, the Edison Electric Institute, and the National Rural Electric Cooperative Association.
Comments of Exelon
Exelon and its affiliates support the comments of EEI on the Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”.

Comments of Consumers Energy
The following comments from Consumers Energy on NERC’s proposed BES Cyber Asset Survey Request for your consideration:

- On page 26 of the proposed survey request, NERC indicates that “NERC expects to present the proposed Data Request for NERC Board of Trustees approval on August 13-14, 2014. Upon NERC Board of Trustees approval, the proposed Data Request will be issued and become mandatory. NERC proposes to require Reporting Entities to respond to the proposed Data Request within 70 days of its issuance.” We understand that per FERC’s directives from Order No. 791, NERC will need to use the collected survey data to complete the informational filing to FERC by February 3, 2015; however, as of these comments are being submitted, entities are still waiting for NERC’s issuance of V5 Implementation Study Report that identifies key conclusions, lessons learned, and recommendations for transition to Version 5; in addition, NERC has just been soliciting industry comments on V3-V5 Transition Guide and V5 revisions. Without finalized guidance from NERC, we are unsure whether the survey could be completed by the entities by NERC proposed due date and in a quality fashion.

- In FERC approved CIP standard CIP-003-5, under requirement R2, it is stated that “An inventory, list, or discrete identification of low impact BES Cyber Systems or their BES Cyber Assets is not required.” Thus, should the low impact BES Cyber Systems or their BES Cyber Assets be excluded from the survey in order to be in alignment with the standard/requirement?

We also agree with the comments being submitted by the North American Generator Forum.
Comments of Ameren
Ameren agrees with and supports comments of the Edison Electric Institute (EEI) and includes them here by reference.
Comments of Vectren
Vectren fully supports comments submitted by EEI.
Comments of
Richland Operations Office | U.S. Department of Energy
1. The survey places a large burden on the entities that must develop inventories and respond to this request. Order 791 did not require NERC to survey all registered entities. The survey scope requires labor intensive tasks in order to assess, tabulate and differentiate all Cyber Assets, their related Systems and locations, both in scope and not in scope. This includes Low Impact rated systems and their related cyber assets and locations - a much larger scope of Cyber Assets than required alone by CIP Version 5. For example, Version 5 does not require a list, whereas this survey requires the development of a list.

**Recommendation:** NERC reduce the burden on registered entities by using one or more of the following methods:

   a. Survey either a sampling of entities across the BES
   b. Request that entities send data from a sample facility
   c. Request volunteers to fill out the survey that have already analyzed and/or implemented the revised definitions.
   d. Survey the systems that are included or excluded based on the 15-minute criteria, since it is the BES Cyber Systems that provide the reliability context rather than the number of individual assets. (This would also help NERC to determine if the standards are being applied consistently and provide data to determine if the systems being included are the appropriate systems from a security and reliability standpoint.)
   e. Survey based on risk and associated with High and Medium Impact BES Cyber Assets and their related Systems and sites/locations.
   f. If sampling of the High and Medium assets is not acceptable, at least sample Low Impact Cyber Assets and their associated Systems or locations rather than requiring a full inventory.

2. The NERC survey and Attachment 1 document lists survey requirements and parameters for devices and systems which are not considered BES Cyber Systems. “Physical Access Control System,” “Locally Mounted Physical Security,” “Network Printer,” etc., for example are not BES Cyber Systems.

**Recommendation:** Entity recommends clarifying the survey requirements as well as Attachment 1 to include only potential BES Cyber Systems.

3. NERC states the data or information collected will be “validated” but in fact only states how NERC will ensure appropriate entities responded. NER does not state clearly how it will validate the actual data provided. The statement, “NERC will further validate the data provided” is ambiguous.

**Recommendation 11:** Entity recommends clearly describing how the actual data will be validated to comply with NERC RoP Section 1600.

4. NERC estimates the burden to be ‘minimal’ estimating 40 hours for a ‘small’ entity and less than 100 hours for a ‘larger’ entity. This is not an accurate estimate; such an inventory, especially at Low facilities, will be much more time consuming than the NERC estimate. If the actual burden were 40 or 100 hours as applicable, then the survey would be reasonable.

**Recommendation:** Revise and reduce the survey to only take 40 or 100 hours for small or large entities, as applicable.
5. By The Definition of “Physical Access Control Systems” (p.29, 31 33), registered entities may have Physical Access Control Systems installed at many facilities that protect portions of facilities, such as warehouses, that have no impact on the BES. Physical Access Control Systems should not be included within the survey because they do not affect reliable operation of the Bulk Electric System.

**Recommendation:** Remove PACS from the scope of the survey. If Physical Access Control Systems are not removed from the survey, clarify that only Physical Access Control Systems protecting Physical Security Perimeters (PSPs) are included in the survey.


**Recommendation:** Remove Locally Mounted Physical Security Devices from the scope of the survey. If Locally Mounted Physical Security Devices are not removed from the survey, clarify that only Locally Mounted Physical Security Devices protecting Physical Security Perimeters (PSPs) are included in the survey.

7. See Definition of “Sensor / Actuator / Transmitter” (p.32): The potential scope of the proposed definition is onerous and would not provide valuable information because of the many types of devices included in the category.

**Recommendation:** Remove the “Sensor / Actuator / Transmitter” category from the scope of the request. If NERC does not remove the category, then narrow the category in order that it may yield more meaningful information.

8. NERC states in the BES Cyber Asset Survey FAQ sent July 7, 2014 Q1, that “To comply with FERC’s directives, NERC needs the level of detail requested in the survey in order to provide meaningful analysis as part of its informational filing to FERC.” The level requested in the survey is not as directed in the FERC Order No. 790. FERC Order No. 791 specifically states NERC explain the types or functions of Cyber Assets that are excluded from being designates as BES Cyber Assets and the rationale as to why; it does not require the level of detail required in the survey.

**Recommendation:** Modify the survey request to require only types or functions of Cyber Assets that are excluded from being designated as BES Cyber Assets as a result of the 15 minute rule.
Comments of FMPA
FMPA supports the NAGF and APPA comments regarding the BES Cyber Asset Survey.

FMPA agrees with both organizations that the survey as currently drafted is beyond the scope of the FERC directive and is overly burdensome.
Comments of

KCPL
Kansas City Power and Light would like to endorse the following comments made by the Edison Electric Institute (EEI) for the proposed *Survey Regarding the Scope of the Term BES Cyber Asset* dated May 30, 2014. Attached are the final version of the EEI’s comments on the subject.
Comments of TEP
July 15, 2014

RE: Request for Public Comment on Proposed Request for Data or Information Survey Regarding the Scope of the Term “BES Cyber Asset”

To Whom It May Concern,

Tucson Electric Power Company supports the comments of the American Public Power Association, the Edison Electric Institute, and the National Rural Electric Cooperative Association, submitted on July 14, 2014, regarding the matter referenced above.

Sincerely,

/s V. Michael Nitido
Comments of
Westar
Westar Energy participated in the drafting of the comments submitted by the Edison Electric Institute (EEI) and support the documented suggestions for revisions to the BES Cyber Asset Survey.
Comments of
OGE
Oklahoma Gas and Electric supports EEI’s comments on the BES Cyber Asset Survey.
Comments of TECO
Tampa Electric Company wishes to submit the following comments for NERC’s consideration.

Tampa Electric Company (TEC) participated in the development of Edison Electric Institute’s (EEI’s) comments on the BES Cyber Asset Survey and supports the comments as submitted by EEI and the Joint Trades.

In particular, TEC is concerned by the potential burden for the proposed survey and the impact that burden could have on its ability to implement CIP Version 5 in a timely fashion. TEC has already begun the arduous process of implementing CIP Version 5. TEC would have to divert resources that are urgently needed to implement CIP Version 5 in order to respond to the survey in its current form. TEC specifically endorses the concept of leveraging the experience of the pilot program participants to reduce the burden on the industry participants and to achieve the goals set forth in FERC order 791.
Comments of AECI
AECI provides the following comments for AECI’s proposed BES Cyber Asset Survey draft poste May 30 2014:

**AECI Comment:** All Cyber Assets located at facilities containing BES Cyber Assets, cannot be reasonably in scope, as requested in multiple parts of this survey

**AECI Recommendation:** Consider limiting scope to Cyber Assets within PSPs containing BES Cyber Assets.

**AECI Comment:** Without due process, AECI cannot endorse NERC’s de facto definition for “data center” embedded on page 10, part 1, section I.

**AECI Recommendation:** Consider using Control Center definition and soliciting Entities’ “data center” definition applied.

**AECI Comment:** As part of the transition from CIP Version 3 to CIP Version 5 standards, AECI is currently drafting, developing, testing and validating the processes for the identification and classification of BES Cyber Assets, Systems and their respective site rankings and/or classifications. Given this survey, AECI would be required to fast track the development and implementation of Version 5 processes in order to properly complete this survey.

**AECI Recommendation:** AECI recommends waiting until CIP Version 5 programs and processes have developed and matured. This will provide AECI the tools to help NERC better understand and describe the BES Cyber Asset identification and classification processes, as well as ensures a more accurate tally of Cyber Assets and their associated Systems and locations. Together, these results will provide better industry guidance. Additionally, AECI could choose to survey the NERC CIP Version 5 Transition Study pilot participants.

**AECI Comment:** AECI is required to respond to this proposed survey which includes Distribution Providers (as described in the applicability section of 4.1.2 or CIP-003-5. Was the intent to reference CIP-003-5 or CIP-002-5? Does NERC have a list of Entities that meet those criteria? It will be difficult to ensure all Registered Entities required to respond have completed the survey without a list of Distribution Providers meeting the criteria.

**AECI Recommendation:** AECI recommends removing Distribution Providers from the list of Entities that are required to respond, and/or to ensure a list of Distribution Providers is identified.

**AECI Comment:** The proposed NERC response time is 70 days from issuance with anticipated NERC Board of Trustees approval August 13-14, 2014. Assuming a survey release of August 15, 2014, the survey response would be due by October 24, 2014. AECI believes this schedule will not allow AECI sufficient time to accurately gather the data required from this survey.

**AECI Recommendation 2:** AECI recommends NERC extend the amount of time allotted in order for AECI to respond or reduce or to exclude the Low Impact Cyber Assets from the survey scope.
Comments of PacifiCorp
In regards to the comments that are due today pertaining to the BES Cyber Asset Survey, PacifiCorp elects to support the comments submitted today by EEI (see attached).