NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments on Protection System Maintenance & Testing — Project 2007-17 – Definition of Protection System

The Protection System Maintenance & Testing Standard Drafting Team thanks all commenters who submitted comments for the revised definition of "Protection System."

The revised definition was posted for a 30-day public comment period from September 13, 2010 through October 12, 2010. Stakeholders were asked to provide feedback on the definition through a special Electronic Comment Form. There were 27 sets of comments, including comments from more than 62 different people from approximately 53 companies representing 7 of the 10 Industry Segments as shown in the table on the following pages.

http://www.nerc.com/filez/standards/Protection_System_Maintenance_Project_2007-17.html

While several commenters made suggestions to further refine the definition of Protection System, the team did not make any additional changes to the definition based on stakeholder comments. The team did, however remove the proposed modification to PER-005 from the implementation plan. No other changes were made.

- Some commenters made suggestions for modifications to various portions of the proposed definition of Protection System. There was no commonality to the proposed revisions and these modifications did not seem to provide greater clarity than was provided with the last version of the proposed definition posted for comment and ballot. Since most stakeholders agreed with the latest version of the proposed definition, no changes were made to the definition.
- Several commenters questioned the applicability of the defined term "Protection System" in PER-005; the SDT agreed and modified the Implementation Plan for the definition of Protection System to remove the reference to PER-005.
- Several commenters also used the comment period as a forum to show displeasure with the NERC and regional BES definitions. Making modifications to the definition of BES is outside the scope of work assigned to this drafting team.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Reliability Standards Development Procedures: http://www.nerc.com/standards/newstandardsprocess.html.

Index to Questions, Comments, and Responses

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Mallory Huggins	NERC Staff										

Additional Member	Additional Organization	Region	Segment Selection	
1.	Phil Tatro	NERC	NA - Not Applicable	NA
2.	Bob Cummings	NERC	NA - Not Applicable	NA

Additional Member	Additional Organization	Region	Segment Selection	
1.	Phil Tatro	NERC	NA - Not Applicable	NA
2.	Bob Cummings	NERC	NA - Not Applicable	NA

2.	Group	Guy Zito	Northeast Power Coordinating Council											X

Additional Member	Additional Organization	Region	Segment Selection	
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	Gregory Campoli	New York Independent System Operator	NPCC	2

Group/Individual	Commenter	Organization		Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
3.	Kurtis Chong	Independent Electricity System Operator	NPCC	2									
4.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1									
5.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1									
6.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10									
7.	Dean Ellis	Dynegy Generation	NPCC	5									
8.	Brian Evans-Mongeon	Utility Services	NPCC	8									
9.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5									
10.	Brian L. Gooder	Ontario Power Generation Incorporated	NPCC	5									
11.	Kathleen Goodman	ISO - New England	NPCC	2									
12.	Chantel Haswell	FPL Group, Inc.	NPCC	5									
13.	David Kiguel	Hydro One Networks Inc.	NPCC	1									
14.	Michael R. Lombardi	Northeast Utilities	NPCC	1									
15.	Randy MacDonald	New Brunswick System Operator	NPCC	2									
16.	Bruce Metruck	New York Power Authority	NPCC	6									
17.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10									
18.	Robert Pellegrini	The United Illuminating Company	NPCC	1									
19.	Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1									
20.	Saurabh Saksena	National Grid	NPCC	1									
21.	Michael Schiavone	National Grid	NPCC	1									
22.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3									
3. Group	Denise Koehn	Bonneville Power Administration		X		X		X	X				

Additional Member	Additional Organization	Region	Segment Selection
1.	Dean Bender	BPA, Transmission SPC Technical Svcs	WECC 1

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
4.	Group	Steve Rueckert	WECC										X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Mary Rieger	WECC	WECC	10
2.	John McGee	WECC	WECC	10

5.	Group	Ben Li	IRC Standards Review Committee		x								

	Additional Member	Additional Organization	Region	Segment Selection
1.	Matt Goldberg	ISO-NE	NPCC	2
2.	Charles Yeung	SPP	SPP	2
3.	Bill Phillips	MISO	MRO	2
4.	Greg Van Pelt	CAISO	WECC	2
5.	Patrick Brown	PJM	RFC	2
6.	Steve Myers	ERCOT	ERCOT	2
7.	Mark Thompson	AESO	WECC	2
8.	James Castle	NYISO	NPCC	2

6.	Group	Michael Gammon	Kansas City Power & Light	x		x		x	x				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Todd Moore	KCPL	SPP	1, 3, 5, 6

7.	Individual	Jana Van Ness	Arizona Public Service Company	x		x		x	x				
8.	Individual	James Stanton	SPS Consulting Group Inc.								X		
9.	Individual	Martin Bauer	US Bureau of Reclamation					X					
10.	Individual	Karl Bryan	US Army Corps of Engineers	X				X					

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
11.	Individual	Kirit S. Shah	Ameren	X		X		X	X				
12.	Individual	Greg Froehling	Green Country Energy					X					
13.	Individual	Dan Roethemeyer	Dynegy Inc.					X					
14.	Individual	Paul Rocha	CenterPoint Energy	X									
15.	Individual	Robert Ganley	LIPA	X									
16.	Individual	Andrew Z. Pusztai	American Transmission Company	X									
17.	Individual	Thad Ness	American Electric Power (AEP)	X		X		X	X				
18.	Individual	Kasia Mihalchuk	Manitoba Hydro	X		X		X	X				
19.	Individual	Kathleen Goodman	ISO New England Inc.		X								
20.	Individual	Patti Metro	NRECA	X		X							
21.	Individual	RoLynda Shumpert	South Carolina Electric and Gas	X		X		X	X				
22.	Individual	Terry Harbour	MidAmerican Energy	X									
23.	Individual	Michael Lombardi	Northeast Utilities	X		X		X					
24.	Individual	Dan Rochester	Independent Electricity System Operator		X								
25.	Individual	Jason L. Marshall	Midwest ISO		X								

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
26.	Individual	Greg Rowland	Duke Energy	X		X		X	X				
27.	Individual	Alice Murdock Ireland	Xcel Energy	X		X		X	X				

1. Do you agree with the proposed definition of "Protection System?" If not, please provide specific suggestions for improvement.

Summary Consideration: Numerous commenters confused the definition with its applicability in various standards. Other commenters made suggestions to modify various portions of the definition. No changes were made to the definition in response to these comments. Several commenters questioned the applicability of the defined term "Protection System" in PER-005; the SDT agreed and modified the Implementation Plan for the definition of Protection System to remove the reference to PER-005. Several commenters also used the comment period as a forum to show displeasure with the NERC and regional BES definitions. Making changes to the definition of Bulk Electric System is outside the scope of work assigned to this drafting team.

Organization	Yes or No	Question 1 Comment
NERC Staff	No	NERC staff does not support the phrase "voltage and current sensing devices providing input to protective relays." While no version of the definition has been all-inclusive with respect to this phrase, we believe that the best phrase would be a combination of several drafts and should state the following: "voltage and current sensing devices and associated circuitry from the voltage and current sensing devices to the protective relay inputs." As currently written, the definition represents a step backward from the language in the previous definition ("voltage and current sensing inputs to protective relays and associated circuitry from the voltage and current sensing devices") and should be modified.
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is better supported by industry.		
Northeast Power Coordinating Council	No	This project addresses the definition of a Protection System. However, an ongoing issue that needs to be addressed is clarification of when a Bulk Electric System transmission Protection System applies to a Distribution Provider. An example would be for a tee-tap off a Bulk Power System 345kV line to a step down transformer supplying distribution--would the relaying on the low side of the transformer be expected to comply with the requirements of PRC-005-2? Would the protection system configuration be considered a Protection System? Will this issue be addressed within the scope of Project 2007-17?
Response: Thank you for your comment. The SDT believes these questions are not within the scope of Project 2007-17 and should be addressed by the Regional Entities.		
WECC		The definition is generally acceptable. However, we believe that better language for the third bullet is as follows: DC supply sources affecting the "Protection System" (including station batteries, battery chargers, and non-battery-based dc supply), and...A definition of non-battery-based dc supply should be included to avoid confusion and we offer the following: The inverter or rectifier in the circuit, dependent upon how the end use quipment is designed. Uninterruptible power supply (UPS) such as on-line, line-interactive or standby that some of the protection system could be on. The intent of the suggestion would consider that the entire protection system has to operate in order to maintain the reliability of the BES. An example would be if the protective relay

Organization	Yes or No	Question 1 Comment
		and associated communications were on a UPS system and the intended device to operate were on station batteries, this would be the best case scenario as the Micro processors relays and the newer associated communications do not like the voltage drop when the station switches to the station batteries, hence the use of UPS options. Micro processors relays do have internal battery backup to keep them up and running, though a maintenance task would have to be included to be sure that they are properly maintained and tested, so the UPS option is easier and has been “kind of” an industry standard in the past. In the end the UPS would have to be on a maintenance schedule also.
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is better supported by industry. The term “non-battery-based dc supply” is meant to be a broad term to capture other methods such as flywheels, compressed air, fuel cells, or any other emerging technology which is capable of supplying dc power to the Protection System.		
Kansas City Power & Light	No	The phrase, "non-battery-based dc supply" is ambiguous and not well defined. It is critical this definition be clear in its intent and not introduce confusion to allow maintenance programs to be effective. Recommend this phrase either needs additional definition or should be considered for removal.
Response: Thank you for your comment. The SDT believes the language is clear and supported by industry. The term “non-battery-based dc supply” is meant to be a broad term to capture other methods such as flywheels, compressed air, fuel cells, or any other emerging technology which is capable of supplying dc power to the Protection System.		
SPS Consulting Group Inc.	No	The revised definition perpetuates the confusion over "communications systems" embedded or otherwise associated with Protection Systems. The term "communications components" is more accurate.
Response: Thank you for your comment. The SDT believes the language is clear and addresses relay communication systems currently used by industry.		
US Bureau of Reclamation	No	The term "protection functions" is ambiguous as it is not related to the protection function associated with the protective relays. There are other protection functions not associated with protective relays that respond to electrical quantities. The language for Communication systems should be changed to remove the ambiguity. The following change would be clear, "Communication system necessary for the correct operation of the protective relays" The input to the relays is from voltage and current sensing devices through their respective circuits. Since the definition for protective relays separates the term "control circuitry" associated with protective relays, it is clear that protective relays do not also include the "control circuitry". By the same token, voltage and current sensing devices do not include their related circuits. The definition for voltage and current sensing devices should be revised to include the term "circuits". The following language change would serve make it clear: "Voltage and current sensing devices and their respective circuits providing inputs protective relays".
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is clear, concise, and supported by industry.		
US Army Corps of Engineers	No	The use of the term "protection functions" is not a defined NERC term and either the term should be defined or it should not be used. At best the term is ambiguous and could lead to scope growth by auditors. Recommend

Organization	Yes or No	Question 1 Comment
		that the following changes be made: "Communication system necessary for the correct operation of the protective relays." "Control circuitry associated with protective relays through the trip coil(s) of the circuit breaker or other interrupting device." See the next paragraph for the proposed correction to the DC Supply part of the definition. The input to the relay is from voltage and current sensing devices yet there is no mention of the associated circuits. The same can be said about the station DC supply circuits. The definition should apply to the circuits providing inputs or control power to the protective relays and from the output of the relays to the tripping coils of the circuit breaker. Recommend the following: "Voltage and current sensing devices and their respective circuits providing inputs to the protective relays." "Station DC supply associated with protective relays (including station batteries, battery charger, non-battery-based DC supply circuitry to the protective relays and from the relay to the trip coil(s)of the circuit breaker), and"
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is clear, concise, and supported by industry.		
Dynegy Inc.	No	The majority of the definition is good; however, the term "non-battery-based dc supply' is still somewhat vague. Can you please further define or provide some examples?
Response: Thank you for your comment. The SDT believes the language is clear and supported by industry. The term "non-battery-based dc supply" is meant to be a broad term to capture other methods such as flywheels, compressed air, fuel cells, or any other emerging technology which is capable of supplying dc power to the Protection System.		
CenterPoint Energy	No	(a) CenterPoint Energy believes the proposed re-definition of "Protection System" is technically incorrect due to the inclusion of trip coils as part of the control circuitry. A protection system has correctly performed its function if it provides tripping voltage up to the terminals of trip coils. From that point, the circuit breaker can fail to timely interrupt fault current due to several factors, such as a binding mechanism, stuck mechanism, broken pull rod, bad insulating medium, or bad trip coils. Local breaker failure protection, or remote backup protection, is installed to address the various possible causes of circuit breaker failure. The proposed re-definition of "Protection System" should be revised to indicate control circuitry associated with protective functions UP TO THE TERMINALS OF the trip coil(s) of the circuit breakers or other interrupting devices. (b) On the surface, the proposed re-definition of "Protection System" appears mainly applicable to PRC-005 based upon the Standards Announcement and proposed Implementation Plan. However, NERC standard PRC-004-1 Analysis and Mitigation of Transmission and Generation Protection System Misoperations also uses the capitalized term "Protection System". CenterPoint Energy believes it is inappropriate to require reporting of Misoperations of transmission Protection Systems and generator Protection Systems for bad trip coils within a circuit breaker. For application to PRC-004-1, CenterPoint Energy recommends revising the proposed re-definition to indicate control circuitry associated with protective functions UP TO THE TERMINALS OF the trip coil(s) of the circuit breakers or other interrupting devices.
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is better supported by industry.		
Midwest ISO	No	We have an issue with the implementation plan. The implementation plan proposes to capitalize the term

Organization	Yes or No	Question 1 Comment
		"protection system" in NUC-001-2, PER-005-1, and PRC-001-1. We disagree with capitalizing the term because protection system was a defined term when these standards were written. Thus, if the drafting teams of those standards intended for the definition in the NERC glossary of terms to apply, they would have capitalized the term. Furthermore, capitalizing the term may fundamentally alter the meaning of the standard. For PER-005-1, we believe the standard is altered because protection system as used in this standard actually refers to special protection system or remedial action schemes.
Response: Thank you for your comment. The SDT agrees and will revise the Implementation Plan to remove PER-005 from the list of standards to be modified. However, the SDT believes the term Protection System should be capitalized as described in the Implementation Plan for NUC-001-2 and PRC-001-1.		
American Electric Power (AEP)	No	1. This change in definition needs to occur concurrently with other related projects (PRC-005-2). Neither the SDT nor the SC should establish a practice of making changes to definitions outside the parameters of changes to standards. This will introduce opportunities for confusion and does not provide the appropriate signals to the Registered Entities to adjust their programs and make the appropriate changes. If this has to be done faster than the pace of the current PRC-005-2 project, we suggest it still be paired with that project, but a smaller scope be considered to allow for this to pass quickly as possible and then the remaining work can be accomplished in PRC-005-3. 2. We suggest that the SDT consider the creation of sub-definitions opposed to crafting a single term for complex and diverse components that could make up the Protection System. As it stands, AEP cannot support this as it still does not remove the degree of ambiguity that could result in interpretation challenges during later enforcement and monitoring activities. We understand the urgency to make progress; however, the deliverables of this team can have significant collateral impacts in the compliance process. 3. The bullet for Protective relays should be further clarified with the addition of applied on or designed to provide protection for the BES that responds to the electrical fault or disturbance conditions. 4. Below are the comments that were provided in the second draft that were not adequately addressed in the consideration of the comments. A. The definition as drafted includes "Station dc supply." While this appears reasonable and innocuous, the term is unclear and could be construed by an auditor to include a lot of equipment and infrastructure not intended by the PSMT SDT. For example, station battery chargers are typically supplied by station auxiliary power transformers, which in turn are supplied by primary-voltage bus work, primary-voltage fuses, or primary-voltage circuit breakers. An auditor for either PRC-005 or any other Standard referencing "Protection System" could read that such primary-voltage equipment is part of the Protection System and therefore subject to certain requirements in either PRC-005 or any other Standard referencing Protection System. B. The definition as drafted includes "Communications systems necessary. . . ". Once again, this term appears innocuous, but it is actually unclear. For example, if a transfer-trip channel is carried on a microwave path, an auditor may decide that the entire microwave equipment, microwave building battery, and microwave building emergency generator are all part of the Protection System, and thus subject to requirements in either PRC-005 or other existing or future Standards that refer to Protection System. AEP

Organization	Yes or No	Question 1 Comment
		recommends that the term be phrased "communications paths" opposed to "communications systems". C. Similar to the above two items, we are concerned about the inclusion of voltage and current-sensing "devices" in the Definition. As written, applicability can be inferred to the entire device and not merely its output quantities, not only for this Standard but any other that references a Protection System. AEP recommends the phrase "circuitry from voltage and current-sensing devices providing inputs to protective relays" instead of "voltage and current-sensing devices providing inputs to protective relays."
Response: When the Board of Trustees was asked to approve an interpretation of PRC-005-1 that was written by the PSMT SDT, the board acknowledged the reliability gap identified by the drafting team caused by the definition of "protection system" and directed that work to close this reliability gap should be given "priority." To close this reliability gap the BOT has directed that revised definition be applied to PRC-005-1 as soon as practical - not years from now. The implementation plan now proposes at least 12 months for entities to apply the new definition to PRC-005-1, and that should give entities time to apply the new definition to PRC-005-1. **2. The SDT believes the current draft of the definition as balloted is clear, concise, and supported by industry.** **3. The SDT believes these questions are not within the scope of Project 2007-17 and should be addressed by the Regional Entities.** **4A. The SDT believes the current draft of the definition as balloted is clear, concise, and supported by industry. The definition of Protection System with regards to dc supply has been modified and now reads:** Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply). **4B. The SDT believes your comment pertains to standards and requirements, and not the definition of Protection System.** **4C. The SDT believes the current draft of the definition as balloted is better supported by industry.**		
Independent Electricity System Operator	No	While we agree with the definition itself, we do have a concern about its application. An ongoing issue that needs to be addressed is clarification of when a Bulk Electric System transmission Protection System applies to a Distribution Provider. This was addressed in part in the interpretation request regarding transmission Protection Systems, Project 2009-17. An example would be for a tee-tap off a Bulk Power System 345kV line to a step down transformer supplying distribution -- would the relaying on the low voltage side of the transformer be expected to comply with the requirements of PRC-005-2? Would the protection system configuration be considered a Protection System? Will this issue be addressed within the scope of Project 2007-17?
Response: Thank you for your comment. This clarification is provided in each requirement that uses the term, "Protection System" by identifying the responsible entity. The question relates to "application" of the definition, not to the definition."		
NRECA		My comment is related to the Implementation plan which will modify the PER-005. I am specifically concerned with changing in R3.1 "established operating guides or "protection systems" to mitigate IROL violations" to "established operating guides or "Protection Systems" to mitigate IROL violations". This modification changes the intent of requirement PER-005 R3.1. The requirement was developed by the drafting team to address an Order 693 directive to require the use of simulators by reliability coordinators, transmission operators and balancing authorities that have operational control over a significant portion of load and generation. The System Personnel Training SDT felt that the use of the phrase "established IROLs or has established operating guides

Organization	Yes or No	Question 1 Comment
		or protection systems to mitigate IROL violations" appropriately represents the impact of entities on the reliability of the BES. In the context of PER-005 R3.1, this specific language was used to broadly include anything that an entity utilizes to prevent an IROL which could be an "operating guide or a protection system" like a RAS in WECC or an SPS in the Eastern Interconnection. It was not intended to include all the items included in the term that is being defined in Project 2007-17.
Response: Thank you for your comment. The SDT agrees and will revise the Implementation Plan to remove PER-005 from the list of standards to be modified.		
MidAmerican Energy	No	The drafting team did not properly address previous comments to include BES references in each PRC-005 sub bullet definitions and left "DC system" wording in the definition with only a comment in parentheses. The Protection System definition affects multiple standards and must stand alone across those standards. Therefore: 1. BES references are still needed in each sub bullet definition to eliminate ambiguity and to create clearly auditable requirements, meeting a basic standards drafting principal being requested both by FERC and the industry. 2. "DC system" remains a wide open definition. Because regulators and auditors are auditing to "zero" defect requirements and imposing their own interpretations, only specific wording is acceptable. The term "DC system" needs to be replaced with explicit pieces of equipment such as "batteries, battery chargers, and AC / DC converters". To be a credible audit process, both the auditor and audited entity must have a clear understanding of what is being audited. DC system can be interpreted in many ways by an entity or auditor and is not an acceptable term. Further, BES references are needed to create clear and auditable boundaries for this definition.
Response: Thank you for your comments. These comments all relate to "application" of the definition; "auditable boundaries" and "auditable requirements" are part of the standard.		
Duke Energy	Yes	We agree with the revised definition. However the added language raises a question regarding how PRC-005-2 would be applied to DC supply situations where the battery is the backup to the "normal" source of DC power. Specifically, it's unclear to us that Uninterruptible Power Supplies (UPS), rectifiers and motor-generator sets that use batteries as a backup are included in the scope of Table 1.
Response: Thank you for your comment. The SDT believes your comment pertains to the standard PRC-005-2 and not the definition of Protection Systems.		
Xcel Energy	Yes	The Implementation Plan indicates that the lower case "protection system" in 3 other standards would be replaced with the capitalized term "Protection System" to properly reflect its use in those standards. In PRC-001 the term "protective system" is also used, however the Implementation Plan does not indicate whether this term will also be replaced. If not, then it would seem to imply that the term "protective system" has different meaning than "protection system/Protection System". There is concern that the use of "Protection System" in PRC-001 will require entities to 'coordinate" changes to all elements of the Protection System, which could be of no value for elements such as batteries, battery chargers. It is not clear as to if the intent that ALL elements of the

Organization	Yes or No	Question 1 Comment
		Protection System be coordinated when a new or changed Protection System occurs.
Response: Thank you for your comment. The term "protective system" is not a defined term in the NERC glossary and is not addressed by the Implementation Plan.		
LIPA	Yes	Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and ....Change to Station dc supply associated with protective functions, and....
Response: Thank you for your comment. The SDT believes the current draft of the definition as balloted is better supported by industry.		
American Transmission Company	Yes	None.
Manitoba Hydro	Yes	
ISO New England Inc.	Yes	
South Carolina Electric and Gas	Yes	
Northeast Utilities	Yes	
IRC Standards Review Committee	Yes	
Bonneville Power Administration	Yes	
Arizona Public Service Company	Yes	
Ameren	Yes	
Green Country Energy	Yes	