

NERC Reliability Readiness

CIP-002 & Risk-based Methods for Selecting Critical Assets

DESIGN • BUILD • SECURE



Four Security Disciplines

- Cyber
 - NERC Readiness
 - Secured SCADA/EMS/DCS Design
- Physical
 - Asset Protection Standards
 - Construction Management
- Structural
 - Blast Analysis
 - Structural Hardening
- Operational
 - Grid Reliability Analysis
 - Emergency Operations Procedures





Critical Infrastructure Protection Clients

- Ameren
- Tri-State G&T
- Department of Defense
- Orlando Utilities Commission
- JEA
- MidAmerican Energy
- Kansas City Power & Light
- Hoosier Energy
- City Utilities
- Northeast Utilities
- PEPCO
- Southern Maryland Electric



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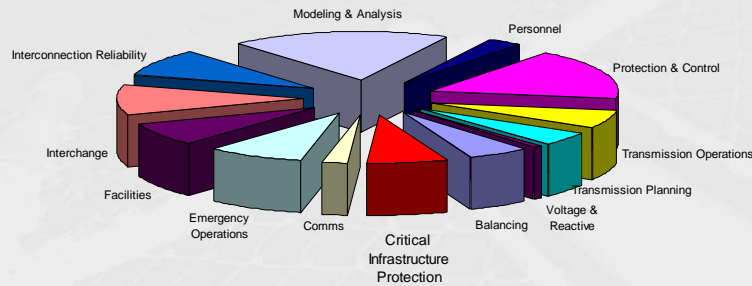


Challenges to Reliability

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NERC Reliability Readiness

Security Integrated with New Standards



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The Challenge

Each Balancing Authority shall operate such that, on a rolling 12-month basis, the average of the clock-minute averages of the Balancing Authority's Area Control Error (ACE) divided by 10B (B is the clock-minute average of the Balancing Authority Area's Frequency Bias) times the corresponding clock-minute averages of the Interconnection's Frequency Error is less than a specific limit. This limit e_1^{-1} is a constant derived from a targeted frequency bound (separately calculated for each Interconnection) that is reviewed and set as necessary by the NERC Operating Committee.

$$AVG_{Period} \left[\left(\frac{ACE_i}{-10B_i} \right) * \Delta F_1 \right] \leq e_1^{-1} \text{ or } \frac{AVG_{Period} \left[\left(\frac{ACE_i}{-10B_i} \right) * \Delta F_1 \right]}{e_1^{-1}} \leq 1$$

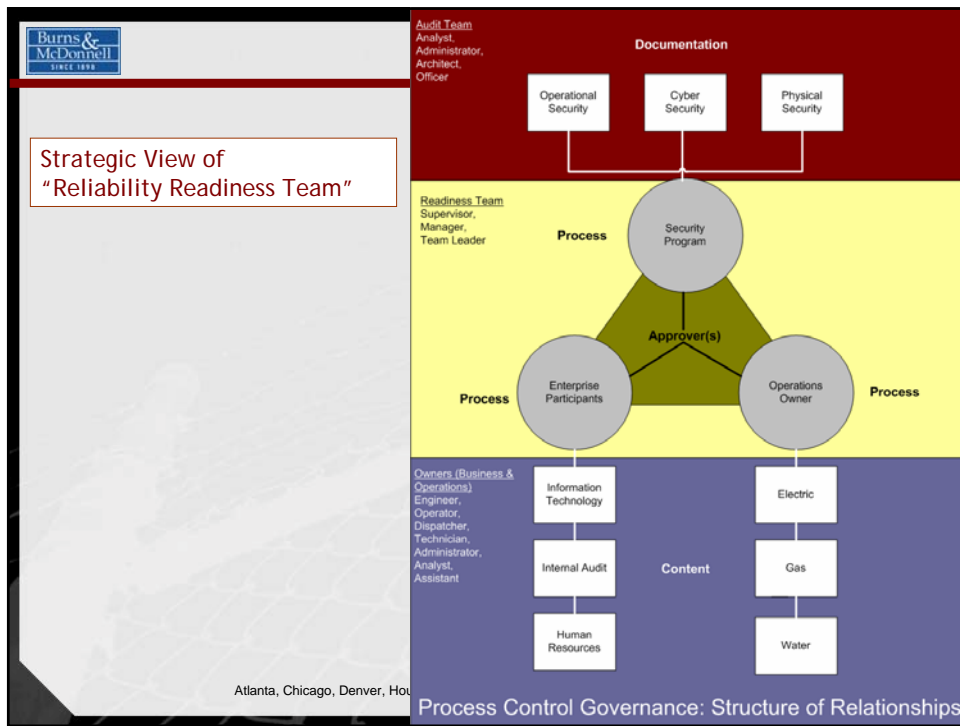
The equation for ACE is:

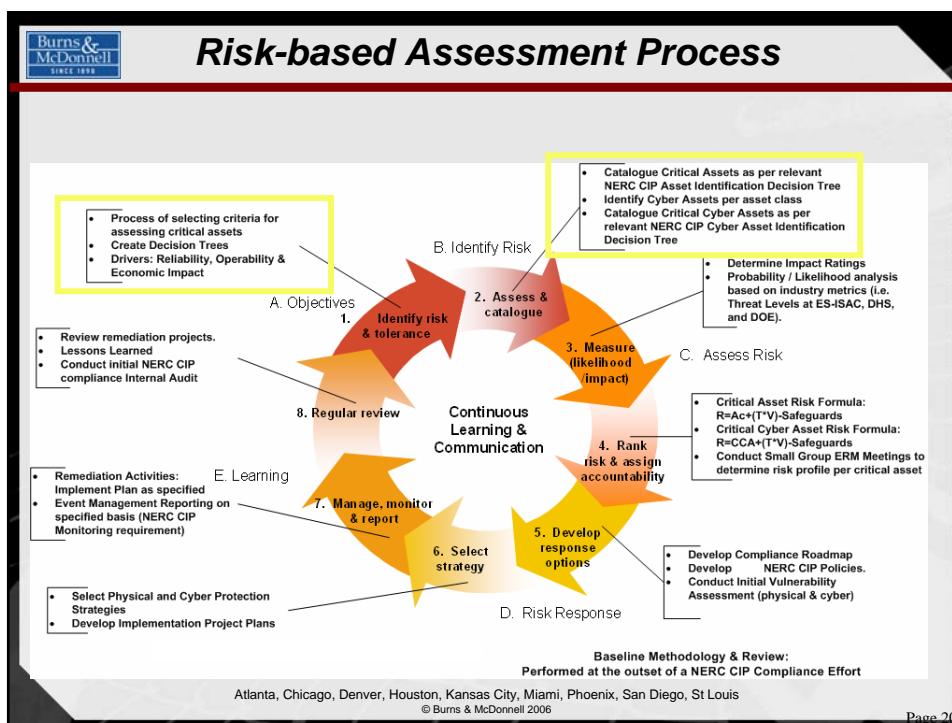
$$ACE = (N_A - N_S) - 10B (F_A - F_S) - I_{DG}$$

The risk-based assessment shall consider the following assets:

- R1.2.1.** Control centers and backup control centers performing the functions of the entities listed in the Applicability section of this standard.
- R1.2.2.** Transmission substations that support the reliable operation of the Bulk Electric System.
- R1.2.3.** Generation resources that support the reliable operation of the Bulk Electric System.
- R1.2.4.** Systems and facilities critical to system restoration, including blackstart generators and substations in the electrical path of transmission lines used for initial system restoration.
- R1.2.5.** Systems and facilities critical to automatic load shedding under a common control system capable of shedding 300 MW or more.
- R1.2.6.** Special Protection Systems that support the reliable operation of the Bulk Electric System.
- R1.2.7.** Any additional assets that support the reliable operation of the Bulk Electric System that the Responsible Entity deems appropriate to include in its assessment.

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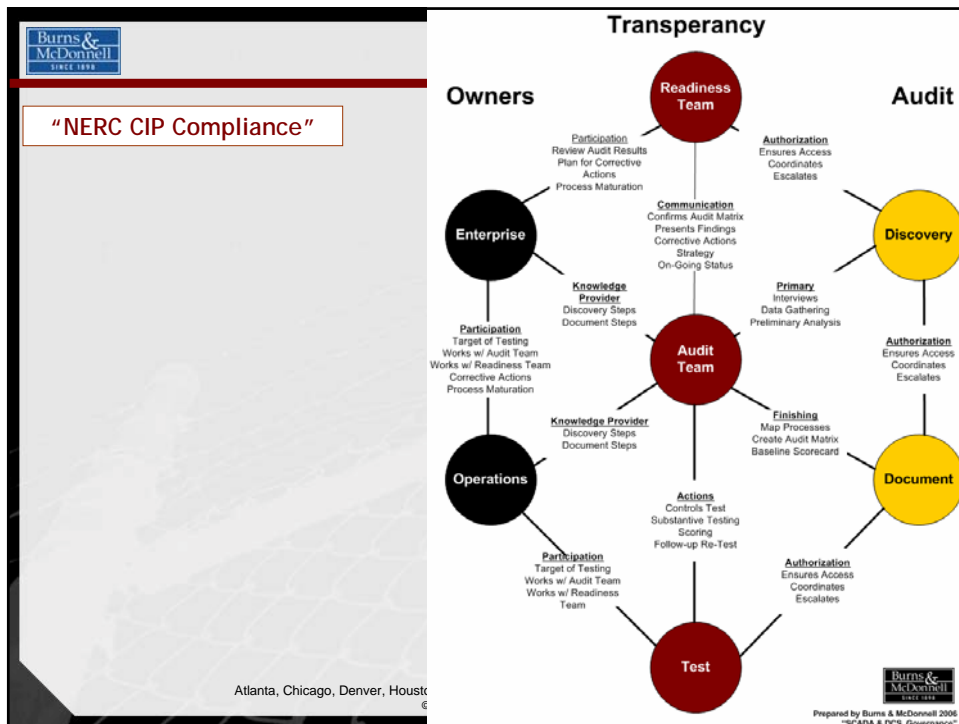
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SINCE 1898

Process Control Governance

Governance, Compliance & Regulatory Control are not the same

Process Ownership	Maturation: Grow from informal to formal Operational Processes = Business Processes Improve / Re-engineer based on Validation Results Participation in Audits and Compliance Process Control = Process Ownership	
Audit	Policy Review Substantive Testing / Security Diagnostic	Controls Testing Update Process
Transparency	Documentation: Audit Findings, Remediation Plans, Updated Policies & Procedures Integrate Corporate Functions: IT, HR, etc.	

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NERC CIP 002 and Beyond:

Critical Assets and Cyber Assets

Risk Management 101: Risk Management starts with what is critical and ends with managing compliance plans.

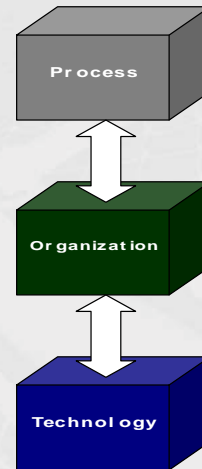
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CIP 002 Challenge

- There is ambiguity in the process to determine critical assets
- Each utility may opt to approach this requirement differently
- Perceived cost of security remediation is dictating many utilities' CA list as opposed to actually addressing criticality, by using a risk based methodology
- No standard for modeling



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Evaluation Criteria

The NERC CIP 002 Standard never specifically requires a "single-loss" criteria. The term "Evaluation Criteria" refers to a combination of factors for determining criticality.

Characteristics	Single Factors
Utilizes multiple factors	Single-loss focus
Weighted questions based on unique design of entities	Harder to qualify generation as critical
Flexible for different "functions"	Forces a one-size fits all approach
Entities can add, change, and/or delete "characteristics" without compromising integrity	

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CIP 002

R1 Critical Asset Identification Method — The Responsible Entity shall identify and document a risk-based assessment methodology to use to identify its Critical Assets.

R1.1. The Responsible Entity shall maintain documentation describing its risk-based assessment methodology that includes procedures and evaluation criteria.


Our Process addresses the following:

- ✓ A Risk-based Assessment Methodology
- ✓ Distills the criteria to be used for selecting critical assets
- ✓ Provides transparency for audit compliance

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CIP Process Walk-Through

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TRANSMISSION

PHYSICAL

OPERATIONAL

STRUCTURAL

CYBER

SHIELD OF SERVICES

Select a previously saved methodology or create a new methodology

Generation
Demonstration - (Assets not Allocated)

Transmission
Demonstration - (0%)


Critical Load
Demonstration - (Assets not Allocated)

Control Centers
Demonstration

Add Model
Add New Model

Delete Model

Results
Demonstration - (not complete)



GENERATION

PHYSICAL

OPERATIONAL

STRUCTURAL

CYBER

SHIELD OF SERVICES



Allocate Units

The following is a list of Generation Units. In order to continue, please select units that are physically located at a Generation Station. After selection, please save the Generation Station with a unique and meaningful name. For example, if a plant has 4 Generation Units, select all 4 units, and save as a single Generation Station. All units must be allocated in this way in order to continue.

New Group Name:

Group •	MW •	Select	Asset •	MW •
ECHO	140	<input checked="" type="checkbox"/>	BRAVO_GEN (8)	20
DELTA	87	<input checked="" type="checkbox"/>	BRAVO_GEN (7)	20
FOXTROT	950	<input checked="" type="checkbox"/>	BRAVO_GEN (6)	30
GOLF	98	<input checked="" type="checkbox"/>	BRAVO_GEN (5)	30
KILO	519			
LIMA	160			
SIERRA GEN	234			
XRAY	1248			

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GENERATION

1/6
Does the Generation Station have a unit that is part of the regional Primary Path Blackstart Capability Plan (BCP) for your Balancing Authority/Security Coordinator?



Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input type="radio"/> <input type="radio"/>
DELTA	87	<input type="radio"/> <input type="radio"/>
ECHO	140	<input type="radio"/> <input type="radio"/>
FOXTROT	950	<input type="radio"/> <input type="radio"/>
GOLF	98	<input type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input type="radio"/>
LIMA	160	<input type="radio"/> <input type="radio"/>

SAVE

QUIT

PREVIOUS

NEXT

GENERATION

2/6
Has the Generation Station been listed as Critical by the Department of Homeland Security?


Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
DELTA	87	<input type="radio"/> <input checked="" type="radio"/>
ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input checked="" type="radio"/> <input type="radio"/>

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GENERATION



3/6

Does the generating station have any units on Automatic Generator Control (AGC)?

	Station ▼	Wattage •	Y / N
	BRAVO_GEN	100	<input type="radio"/> <input checked="" type="radio"/>
	DELTA	87	<input type="radio"/> <input checked="" type="radio"/>
	ECHO	140	<input type="radio"/> <input checked="" type="radio"/>
	FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
	GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
	KILO	519	<input checked="" type="radio"/> <input type="radio"/>
	LIMA	160	<input type="radio"/> <input checked="" type="radio"/>


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GENERATION



4/6

Does the generating station have one or more units that have been identified as operating for any or all of the following reasons:

- Needed for meeting reliability criteria for interconnected systems operation.
- Needed to meet load (demand) in constrained areas.
- Needed to provide voltage or security support for the ISO, Balancing Authority, Security Coordinator, and/or any other known local area.

	Station ▼	Wattage •	Y / N
	BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
	DELTA	87	<input checked="" type="radio"/> <input type="radio"/>
	ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
	FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
	GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
	KILO	519	<input type="radio"/> <input checked="" type="radio"/>
	LIMA	160	<input type="radio"/> <input checked="" type="radio"/>


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GENERATION



5/6

Does the Generating Station have a unit with responsibility as part of a specific operating procedure?

Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
DELTA	87	<input checked="" type="radio"/> <input type="radio"/>
ECHO	140	<input type="radio"/> <input checked="" type="radio"/>
FOXTROT	950	<input checked="" type="radio"/> <input type="radio"/>
GOLF	98	<input type="radio"/> <input checked="" type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input type="radio"/> <input checked="" type="radio"/>


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GENERATION



6/6

Other than Generation Stations containing Blackstart Units, does the Generation Station provide greater than 400 MW of power?

Station ▼	Wattage •	Y/N
ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
FOXTROT	950	<input checked="" type="radio"/> <input type="radio"/>
GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input type="radio"/> <input checked="" type="radio"/>
SIERRA_GEN	234	<input type="radio"/> <input checked="" type="radio"/>
XRAY	1248	<input checked="" type="radio"/> <input type="radio"/>


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GENERATION



Generation Methodology

Please select the Wattage value that, according to company policy, would designate a Generation Station as a Critical Asset, regardless of the results of answers to questions posed previously.

100MW

300MW

600MW

1000MW


2000MW

N/A


Asset ▼	Wattage •	Type
BRAVO_GEN	100	Generation
DELTA	87	Generation
ECHO	140	Generation
FOXTROT	950	Generation
GOLF	98	Generation
KILO	519	Generation
LIMA	160	Generation
SIERRA_GEN	234	Generation
XRAY	1248	Generation

CONTINUE

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GENERATION



Generation Methodology Results


Based on your responses, the following assets will be removed. Please indicate any that in your business judgement should remain on the list.

Asset ▼	Wattage •	Is Critical?	Comments
BRAVO_GEN	100	<input type="checkbox"/>	
DELTA	87	<input type="checkbox"/>	


UPDATE

CONTINUE

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TRANSMISSION



2/6

Is the Transmission Asset part of a looped 100KV or higher circuit?

Asset ▼	Voltage •	Y / N
ALPHA (1)	345	<input type="radio"/> Y <input type="radio"/> N
ALPHA (2)	138	<input type="radio"/> Y <input type="radio"/> N
ALPHA (3)	138	<input type="radio"/> Y <input type="radio"/> N
BRAVO (1)	138	<input type="radio"/> Y <input type="radio"/> N
CHARLIE (1)	34.5	<input type="radio"/> Y <input type="radio"/> N
GARFIELD (2)	69	<input type="radio"/> Y <input type="radio"/> N
GOLF (1)	138	<input type="radio"/> Y <input type="radio"/> N


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TRANSMISSION



3/6

Is the Transmission Asset supporting a Critical Generation Station?

Asset ▼	Voltage •	Y / N
ALPHA (1)	345	<input type="radio"/> Y <input type="radio"/> N
ALPHA (2)	138	<input type="radio"/> Y <input type="radio"/> N
ALPHA (3)	138	<input type="radio"/> Y <input type="radio"/> N
BRAVO (1)	138	<input type="radio"/> Y <input type="radio"/> N
CHARLIE (1)	34.5	<input type="radio"/> Y <input type="radio"/> N
GARFIELD (2)	69	<input type="radio"/> Y <input type="radio"/> N
GOLF (1)	138	<input type="radio"/> Y <input type="radio"/> N


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TRANSMISSION



4/6

Does the Transmission Asset provide ties to NERC CIP qualifying entities or connect two or more Balancing Authorities?

NERC Functional Model, Version 2
http://www.nerc.com/pub/sys/all_upd/oc/fmrtg/Functional_Model_Version_2.pdf
 NERC Registered Entity List
<http://www.nerc.com/~org/entities/index.html>

Resources:


	Asset ▼	Voltage •	Y/N
	ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (3)	138	<input type="radio"/> <input checked="" type="radio"/>
	BRAVO (1)	138	<input type="radio"/> <input checked="" type="radio"/>
	CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
	GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
	GOLF (1)	138	<input checked="" type="radio"/> <input type="radio"/>

SAVE


QUIT

PREVIOUS

NEXT



TRANSMISSION



5/6

Based upon a steady-state power flow analysis, a transient stability analysis, or both is there an identified case for an asset where the loss of one or more busses may cause any of the following:

- System instability
- Unacceptable system dynamic response or equipment tripping
- Voltage levels in violation of applicable emergency limits
- Loadings on transmission facilities in violation of applicable emergency limits
- Unacceptable loss of load


	Asset ▼	Voltage •	Y/N
	ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (3)	138	<input type="radio"/> <input checked="" type="radio"/>
	BRAVO (1)	138	<input type="radio"/> <input checked="" type="radio"/>
	CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
	GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
	GOLF (1)	138	<input checked="" type="radio"/> <input type="radio"/>

SAVE


QUIT

PREVIOUS

NEXT



TRANSMISSION



6/6

Does the Transmission Asset have a responsibility as part of a specific operating procedure?

Asset ▼	Voltage •	Y/N
ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (3)	138	<input type="radio"/> <input checked="" type="radio"/>
BRAVO (1)	138	<input type="radio"/> <input checked="" type="radio"/>
CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
GOLF (1)	138	<input checked="" type="radio"/> <input type="radio"/>


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TRANSMISSION



Transmission Methodology



Please select the voltage transmission value that, according to company policy, would designate a Transmission Asset as a Critical Asset, regardless of the results of answers to questions posed previously.

☒ 69kV
☐ 115kV
☐ 138kV
☐ 161kV
☒ 230kV
☐ 345kV
☐ 500kV
☐ 765kV
☐ N/A

Asset ▼	Voltage •	Type •
ALPHA (1)	345	Transmission
ALPHA (2)	138	Transmission
ALPHA (3)	138	Transmission
BRAVO (1)	138	Transmission
CHARLIE (1)	34.5	Transmission
GARFIELD (2)	69	Transmission
GOLF (1)	138	Transmission
GOLF (2)	16	Transmission
GOLF (3)	34.5	Transmission

CONTINUE

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TRANSMISSION

Transmission Methodology Results



Based on your responses, the following assets will be removed. Please indicate any that in your business judgement should remain on the list.

Asset ▼	Voltage •	Is Critical?	Comment
GARFIELD (2)	69	<input type="checkbox"/>	

UPDATE

CONTINUE

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CRITICAL LOAD

1/6

Is the Transmission Asset required for the operation of a National-level Critical Infrastructure Customer, (e.g. Oil and Gas Production, Finance Center, Military Center, etc)?

Asset ▼	Voltage •	Unit •	Type •	Y/N	Comment
ALPHA (1)	345	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
ALPHA (2)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
ALPHA (3)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
BRAVO (1)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
CHARLIE (1)	34.5	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
GARFIELD (2)	69	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
GOLF (1)		kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	


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CRITICAL LOAD



2/6

Is the Transmission Asset required for the operation of a Local-level Critical Infrastructure Customer, (e.g. First Responders, Local Government Continuity, Water/Wastewater, etc)?

Asset ▼	Voltage •	Unit •	Type •	Y/N	Comment
ALPHA (1)	345	kV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
ALPHA (2)	138	kV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
ALPHA (3)	138	kV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
BRAVO (1)	138	kV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
CHARLIE (1)	34.5	kV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
GARFIELD (2)	69	kV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
GOLF (1)		kV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>


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CRITICAL LOAD



3/6

Is the Generation Asset required for the operation of a National-level Critical Infrastructure Customer, (e.g. Oil and Gas Production, Finance Center, Military Center, etc)?

Asset ▼	Wattage •	Unit •	Type •	Y/N	Comment
BRAVO_GEN	100	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
DELTA	87	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
ECHO	140	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
FOXTROT	950	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
GOLF	98	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
KILO	519	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
LIMA	160	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>


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CRITICAL LOAD



4/6

Is the Generation Asset required for the operation of a Local-level Critical Infrastructure Customer, (e.g. First Responders, Local Government Continuity, Water/Wastewater, etc)?

Asset	Wattage	Unit	Type	Y/N	Comment
BRAVO_GEN	100	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	
DELTA	87	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	
ECHO	140	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	
FOXTROT	950	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	
GOLF	98	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	
KILO	519	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	
LIMA	160	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	


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CRITICAL LOAD



5/6

Is there a Control Center associated with the asset that could affect the reliable operation of a National-level Critical Infrastructure Customer?

Asset	Capacity	Unit	Type	Y/N	Comment
ALPHA (1)	345	KV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	
ALPHA (2)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	
ALPHA (3)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	
BRAVO (1)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	
BRAVO_GEN	100	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	
CHARLIE (1)	34.5	KV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	
DELTA	87	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	


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CRITICAL LOAD



6/6

Is there a Control Center associated with the asset that could affect the reliable operation of a Local-level Critical Infrastructure Customer?


Asset	Capacity	Unit	Type	Y/N	Comment
ALPHA (1)	345	KV	Transmission	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
ALPHA (2)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
ALPHA (3)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
BRAVO (1)	138	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
BRAVO_GEN	100	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
CHARLIE (1)	34.5	KV	Transmission	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
DELTA	87	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>

SAVE


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CIP






Survey Results

The results of the Transmission, Generation, Critical Load, and Control Center evaluation methodologies are displayed below. By clicking on the column headings, the results may be sorted by that column. Please note that the "NEXT" button at the bottom will export these results to a printable page for report preparation.

Asset ▼	Type •	TRANSMISSION						GENERATION						CRITICAL LOAD						%	Y/N	Comment		
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6					
ALPHA (2)	Trans																					42%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
ALPHA (3)	Trans																				33%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
BRAVO (1)	Trans																				17%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
BRAVO_GEN	Gen																				33%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
California CC	Control																				100%	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>	
CHARLIE (1)	Trans																				33%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
DELTA	Gen																				0%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
ECHO	Gen																				42%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
FOXTROT	Gen																				25%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
GARFIELD (2)	Trans																				8%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	
GOLF	Gen																				75%	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>	
GOLF (1)	Trans																				42%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>	



Survey Results

The results of the Transmission, Generation, Critical Load, and Control Center evaluation methodologies are displayed below. Please note that the download link will export these results to an Excel compatible format.

Asset	Type	1	2	3	4	5	6	%	Critical?	Comment
ALPHA (2)	Trans									
ALPHA (3)	Trans									
BRAVO (1)	Trans									
BRAVO_GEN	Gen									
California CC	Control									
CHARLIE (1)	Trans									
DELTA	Gen									
ECHO	Gen									
FOXTROT	Gen									
GARFIELD (2)	Trans							8%	No	
GOLF	Gen							75%	Yes	
GOLF (1)	Trans							42%	No	

Asset Summary

NAME: GOLF

TYPE: GENERATION

GENERATION QUESTIONS:

1 2 3 4 5 6

A Red Dot signifies a 'Yes' answer to a specific question for the Generation portion of the assessment. Move the mouse pointer over a question number to view the question.

GENERATION MEGAWATTAGE SELECTOR:

According to the selected minimum wattage determined by company policy, this asset should be regarded as **LESS** critical, regardless of the results of other questions posed.

BUSINESS JUDGEMENT:




Business judgement had no effect on this asset, either due to a "YES" being selected for an above question or being part of a minimum wattage policy judgement.

CRITICAL LOAD QUESTIONS:

N/A N/A 3 4 5 6

A Red Dot signifies a 'Yes' answer to a specific question for the Critical Load portion of the assessment. Move the mouse pointer over a question number to view the question.


Close Window






Survey Results

The results of the Transmission, Generation, Critical Load, and Control Center evaluation methodologies are displayed below. Please note that the download link will export these results to an Excel compatible format.

Asset	Type	TRANSMISSION						GENERATION						CRITICAL LOAD						CRITICAL?	Y/N	Comment	
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6				
ALPHA (2)	Trans																				42%	No	
ALPHA (3)	Trans																				33%	No	
BRAVO (1)	Trans																				17%	No	
BRAVO_GEN	Gen																				33%	No	
California CC	CC																				100%	Yes	
CHARLIE (1)	Trans																				33%	No	
DELTA	Gen																				0%	No	
ECHO	Gen																				42%	No	
FOXTROT	Gen																				25%	No	
GARFIELD (2)	Trans																				8%	No	
GOLF	Gen																				75%	Yes	
GOLF (1)	Trans																				42%	No	
GOLF (2)	Trans																				33%	No	
GOLF (3)	Trans																				50%	No	
INDIA (1)	Trans																				17%	No	
INDIA (2)	Trans																				83%	Yes	
KILO	Gen																				25%	No	





GENERATION

1/6

Does the Generation Station have a unit that is part of the regional Primary Path Blackstart Capability Plan (BCP) for your Balancing Authority/Security Coordinator?

Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input type="radio"/> <input type="radio"/>
DELTA	87	<input type="radio"/> <input type="radio"/>
ECHO	140	<input type="radio"/> <input type="radio"/>
FOXTROT	950	<input type="radio"/> <input type="radio"/>
GOLF	98	<input type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input type="radio"/>
LIMA	160	<input type="radio"/> <input type="radio"/>


SAVE


QUIT

PREVIOUS

NEXT

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GENERATION

2/6

Has the Generation Station been listed as Critical by the Department of Homeland Security?

Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
DELTA	87	<input type="radio"/> <input checked="" type="radio"/>
ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input checked="" type="radio"/> <input type="radio"/>


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GENERATION




3/6

Does the generating station have any units on Automatic Generator Control (AGC)?


	Station ▼	Wattage •	Y / N
	BRAVO_GEN	100	<input type="radio"/> <input checked="" type="radio"/>
	DELTA	87	<input type="radio"/> <input checked="" type="radio"/>
	ECHO	140	<input type="radio"/> <input checked="" type="radio"/>
	FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
	GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
	KILO	519	<input checked="" type="radio"/> <input type="radio"/>
	LIMA	160	<input type="radio"/> <input checked="" type="radio"/>

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GENERATION



4/6


Does the generating station have one or more units that have been identified as operating for any or all of the following reasons:

- Needed for meeting reliability criteria for interconnected systems operation.
- Needed to meet load (demand) in constrained areas.
- Needed to provide voltage or security support for the ISO, Balancing Authority, Security Coordinator, and/or any other known local area.


	Station ▼	Wattage •	Y / N
	BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
	DELTA	87	<input checked="" type="radio"/> <input type="radio"/>
	ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
	FOXTROT	950	<input type="radio"/> <input checked="" type="radio"/>
	GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
	KILO	519	<input type="radio"/> <input checked="" type="radio"/>
	LIMA	160	<input type="radio"/> <input checked="" type="radio"/>

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GENERATION



5/6

Does the Generating Station have a unit with responsibility as part of a specific operating procedure?

Station ▼	Wattage •	Y/N
BRAVO_GEN	100	<input checked="" type="radio"/> <input type="radio"/>
DELTA	87	<input checked="" type="radio"/> <input type="radio"/>
ECHO	140	<input type="radio"/> <input checked="" type="radio"/>
FOXTROT	950	<input checked="" type="radio"/> <input type="radio"/>
GOLF	98	<input type="radio"/> <input checked="" type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input type="radio"/> <input checked="" type="radio"/>


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GENERATION



6/6

Other than Generation Stations containing Blackstart Units, does the Generation Station provide greater than 400 MW of power?

Station ▼	Wattage •	Y/N
ECHO	140	<input checked="" type="radio"/> <input type="radio"/>
FOXTROT	950	<input checked="" type="radio"/> <input type="radio"/>
GOLF	98	<input checked="" type="radio"/> <input type="radio"/>
KILO	519	<input type="radio"/> <input checked="" type="radio"/>
LIMA	160	<input type="radio"/> <input checked="" type="radio"/>
SIERRA_GEN	234	<input type="radio"/> <input checked="" type="radio"/>
XRAY	1248	<input checked="" type="radio"/> <input type="radio"/>


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TRANSMISSION



1/6

Is the Transmission Asset part of a Regional System Restoration Plan, as determined by your Balancing Authority/Security Coordinator?

	Asset ▼	Voltage •	Y / N
	ALPHA (1)	345	<input type="radio"/> <input checked="" type="radio"/>
	ALPHA (2)	138	<input type="radio"/> <input checked="" type="radio"/>
	ALPHA (3)	138	<input checked="" type="radio"/> <input type="radio"/>
	BRAVO (1)	138	<input checked="" type="radio"/> <input type="radio"/>
	CHARLIE (1)	34.5	<input checked="" type="radio"/> <input type="radio"/>
	GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
	GOLF (1)	138	<input type="radio"/> <input checked="" type="radio"/>


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TRANSMISSION



2/6

Is the Transmission Asset part of a looped 100KV or higher circuit?

	Asset ▼	Voltage •	Y / N
	ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
	ALPHA (3)	138	<input checked="" type="radio"/> <input type="radio"/>
	BRAVO (1)	138	<input checked="" type="radio"/> <input type="radio"/>
	CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
	GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
	GOLF (1)	138	<input type="radio"/> <input checked="" type="radio"/>


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TRANSMISSION



3/6

Is the Transmission Asset supporting a Critical Generation Station?

Asset ▼	Voltage •	Y/N
ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (3)	138	<input type="radio"/> <input checked="" type="radio"/>
BRAVO (1)	138	<input type="radio"/> <input checked="" type="radio"/>
CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
GOLF (1)	138	<input type="radio"/> <input checked="" type="radio"/>


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TRANSMISSION



4/6

Does the Transmission Asset provide ties to NERC CIP qualifying entities or connect two or more Balancing Authorities?

Resources:

NERC Functional Model, Version 2
http://www.nerc.com/pub/sys/all_updt/oc/fmrtg/Functional_Model_Version_2.pdf

NERC Registered Entity List
<http://www.nerc.com/~org/entities/index.html>

Asset ▼	Voltage •	Y/N
ALPHA (1)	345	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (2)	138	<input checked="" type="radio"/> <input type="radio"/>
ALPHA (3)	138	<input type="radio"/> <input checked="" type="radio"/>
BRAVO (1)	138	<input type="radio"/> <input checked="" type="radio"/>
CHARLIE (1)	34.5	<input type="radio"/> <input checked="" type="radio"/>
GARFIELD (2)	69	<input type="radio"/> <input checked="" type="radio"/>
GOLF (1)	138	<input checked="" type="radio"/> <input type="radio"/>

SAVE

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5/6

Based upon a steady-state power flow analysis, a transient stability analysis, or both is there an identified case for an asset where the loss of one or more busses may cause any of the following:

- System instability
- Unacceptable system dynamic response or equipment tripping
- Voltage levels in violation of applicable emergency limits
- Loadings on transmission facilities in violation of applicable emergency limits
- Unacceptable loss of load

Asset ▼	Voltage •	Y/N
ALPHA (1)	345	<input type="radio"/> Y <input type="radio"/> N
ALPHA (2)	138	<input type="radio"/> Y <input type="radio"/> N
ALPHA (3)	138	<input type="radio"/> Y <input type="radio"/> N
BRAVO (1)	138	<input type="radio"/> Y <input type="radio"/> N
CHARLIE (1)	34.5	<input type="radio"/> Y <input type="radio"/> N
GARFIELD (2)	69	<input type="radio"/> Y <input type="radio"/> N
GOLF (1)	138	<input type="radio"/> Y <input type="radio"/> N

SAVE QUIT
PREVIOUS NEXT





6/6

Does the Transmission Asset have a responsibility as part of a specific operating procedure?

Asset ▼	Voltage •	Y/N
ALPHA (1)	345	<input type="radio"/> Y <input type="radio"/> N
ALPHA (2)	138	<input type="radio"/> Y <input type="radio"/> N
ALPHA (3)	138	<input type="radio"/> Y <input type="radio"/> N
BRAVO (1)	138	<input type="radio"/> Y <input type="radio"/> N
CHARLIE (1)	34.5	<input type="radio"/> Y <input type="radio"/> N
GARFIELD (2)	69	<input type="radio"/> Y <input type="radio"/> N
GOLF (1)	138	<input type="radio"/> Y <input type="radio"/> N

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TRANSMISSION

Transmission Methodology



Please select the voltage transmission value that, according to company policy, would designate a Transmission Asset as a Critical Asset, regardless of the results of answers to questions posed previously.

☐ 69kV
 ☐ 115kV
 ☐ 138kV
 ☐ 161kV
 ☒ 230kV
 ☐ 345kV
 ☐ 500kV
 ☐ 765kV
 ☐ N/A

Asset ▼	Voltage •	Type •
ALPHA (1)	345	Transmission
ALPHA (2)	138	Transmission
ALPHA (3)	138	Transmission
BRAVO (1)	138	Transmission
CHARLIE (1)	34.5	Transmission
GARFIELD (2)	69	Transmission
GOLF (1)	138	Transmission
GOLF (2)	16	Transmission
GOLF (3)	34.5	Transmission

CONTINUE

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CRITICAL LOAD

1/6


Is the Transmission Asset required for the operation of a National-level Critical Infrastructure Customer, (e.g. Oil and Gas Production, Finance Center, Military Center, etc)?

Asset ▼	Voltage •	Unit •	Type •	Y/N	Comment
ALPHA (1)	345	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
ALPHA (2)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
ALPHA (3)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
BRAVO (1)	138	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
CHARLIE (1)	34.5	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
GARFIELD (2)	69	kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	
GOLF (1)		kV	Transmission	<input type="radio"/> Y <input type="radio"/> N	


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CRITICAL LOAD




3/6

Is the Generation Asset required for the operation of a National-level Critical Infrastructure Customer, (e.g. Oil and Gas Production, Finance Center, Military Center, etc)?

Asset	Wattage	Unit	Type	Y/N	Comment
BRAVO_GEN	100	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
DELTA	87	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
ECHO	140	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
FOXTROT	950	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
GOLF	98	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>
KILO	519	MW	Generation	<input type="radio"/> <input checked="" type="radio"/>	<input type="text"/>
TIMA	160	MW	Generation	<input checked="" type="radio"/> <input type="radio"/>	<input type="text"/>

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Survey Results

The results of the Transmission, Generation, Critical Load, and Control Center evaluation methodologies are displayed below. By clicking on the column headings, the results may be sorted by that column. Please note that the "NEXT" button at the bottom will export these results to a printable page for report preparation.

		TRANSMISSION						GENERATION						CRITICAL LOAD						CRITICAL?		
Asset	Type	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	%	Y/N	Comment
ALPHA (2)	Trans																			42%	<input type="radio"/> <input checked="" type="radio"/>	
ALPHA (3)	Trans																			33%	<input type="radio"/> <input checked="" type="radio"/>	
BRAVO (1)	Trans																			17%	<input type="radio"/> <input checked="" type="radio"/>	
BRAVO_GEN	Gen																			33%	<input type="radio"/> <input checked="" type="radio"/>	
California CC	Control																			100%	<input checked="" type="radio"/> <input type="radio"/>	
CHARLIE (1)	Trans																			33%	<input type="radio"/> <input checked="" type="radio"/>	
DELTA	Gen																			0%	<input type="radio"/> <input checked="" type="radio"/>	
ECHO	Gen																			42%	<input type="radio"/> <input checked="" type="radio"/>	
FOXTROT	Gen																			25%	<input type="radio"/> <input checked="" type="radio"/>	
GARFIELD (2)	Trans																			8%	<input type="radio"/> <input checked="" type="radio"/>	
GOLF	Gen																			75%	<input checked="" type="radio"/> <input type="radio"/>	
GOLF (1)	Trans																			42%	<input type="radio"/> <input checked="" type="radio"/>	

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