

Combination of PEBO 220 + WOP 1F + SOP 8E

General Information

Proposing entity name	Proprietary business information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	Proprietary business information.
PJM Proposal ID	598
Project title	Combination of PEBO 220 + WOP 1F + SOP 8E
Project description	This proposal is a combination of multiple other solutions to deliver an overall complete solution. Combination of: PEBO 220 (2022-W3-385) WOP 1F (2022-W3-853) SOP 8E (2022-W3-663) Various brownfield components required to meet reliability needs
Email	Proprietary business information.
Project in-service date	06/2028
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	

Project Components

1. Combination of PEBO 220 + WOP 1F + SOP 8E
2. 50d - Add 2nd Transformer and SVC & Cap Bank to future Mars Substation
3. 50e - Upgrade Transformer 1 and add new Transformer 2 at existing Pleasant View substation
4. 50g - Add 2nd Transformer at existing Goose Creek substation
5. 50P - Red Lion to Hope Creek 500 kV Upgrade

- 6. 50i - Lady Smith CT to St. John's 230kV Upgrade
- 7. 50j - Lady Smith CT to Summit 230 kV Upgrade
- 8. 50k - Cashs's Corner to Hollymeade 230kV upgrade
- 9. 50l - Cashs's Corner to Gordonsville 230kV upgrade
- 10. 50m - Charlottesville to Proffit DP 230kV upgrade
- 11. 50n - Remington CT to Remington 230kV upgrade
- 12. 50n - Remington CT to GIM Run 230kV upgrade

Greenfield Substation Component

Component title	Combination of PEBO 220 + WOP 1F + SOP 8E
Project description	Proprietary business information.
Substation name	Various
Substation description	Includes all components of proposals PEBO 220, WOP 1F, and SOP 8E.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

None	
Major equipment description	Includes all components of proposals PEBO 220, WOP 1F, and SOP 8E.

	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000

Environmental assessment

Environmental constraints identified are manageable through implementation of an environmental avoidance, minimization, and mitigation strategy incorporated at the beginning of the routing/siting process. Co-location with existing utilities and other infrastructure was prioritized to the greatest extent practicable to minimize the environmental impact on the landscape. The proposed site crosses no mapped national wetland inventory (NWI) waterbodies and no NWI mapped wetlands. Fatal flaws have not been identified for proposed site. A cultural resource professional assisted with the siting process to identify and minimize impacts to known areas with historic sensitivities. An investigation to further identify and evaluate historic properties will be conducted to determine the presence of archaeologically or historically significant resources. Federally listed species have been identified with potential to occur in the area including listed bats and listed mussels, but no critical habitat was identified in the area of the substation site. If suitable habitat is identified or regulations change, agency coordination and species-specific surveys will occur. The project intends to adhere to tree removal seasonal restriction windows to avoid and minimize impacts to protected birds and bats, such as the Indiana bat, northern long-eared bat, bald eagle, and other common raptors. Erosion control best management practices and setbacks will be engineered and utilized to prevent sedimentation from leaving the site for the protection of aquatic species and to avoid water quality impacts. There are no unique or sensitive environmental concerns or impacts with the proposed substation site that cannot be addressed.

Outreach plan

The Company is committed to working with all interested stakeholders through a robust public outreach program to address/respond to community concerns and inform the public about the project to the greatest extent practicable. The Company believes a well-designed public outreach program can have numerous benefits, including fostering a cooperative relationship with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the Company's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas that have the least amount of cultural, environmental, and social impacts on the community. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the Company will involve the community in providing appropriate and practical mitigation measures. The Company will commence its public outreach activities following project award.

Land acquisition plan

See Attachment 9 for Land Acquisition Plan.

Construction responsibility	Proprietary business information.
Benefits/Comments	Resolves reliability and market efficiency issues identified per PJM's Gen. Delivery process.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$1,992,537,950.00
Component cost (in-service year)	\$2,242,619,017.00

Substation Upgrade Component

Component title	50d - Add 2nd Transformer and SVC & Cap Bank to future Mars Substation
Project description	Proprietary business information.
Substation name	Mars
Substation zone	Dominion
Substation upgrade scope	Add 2nd transformer (1440 MVA) and SVC(-300 to 500) & Cap Bank (293.8) to existing Mars substation

Transformer Information

Name	Capacity (MVA)
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Transformer	transformer 2	1440/1440	
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	
New equipment description	Add 2nd transformer (1440 MVA) and SVC(-300 to 500) & Cap Bank (293.8) to existing Mars substation		
Substation assumptions	Substation has not been built yet. Assumed that substation can accommodate new equipment as needed.		
Real-estate description	No expansion of substation fence anticipated.		
Construction responsibility	Proprietary business information.		
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process		
Component Cost Details - In Current Year \$			
Engineering & design	Proprietary business information.		
Permitting / routing / siting	Proprietary business information.		
ROW / land acquisition	Proprietary business information.		
Materials & equipment	Proprietary business information.		
Construction & commissioning	Proprietary business information.		
Construction management	Proprietary business information.		
Overheads & miscellaneous costs	Proprietary business information.		
Contingency	Proprietary business information.		
Total component cost	\$5,000,000.00		
Component cost (in-service year)	\$5,519,064.00		
Substation Upgrade Component			
Component title	50e - Upgrade Transformer 1 and add new Transformer 2 at existing Pleasant View substation		

Project description	Proprietary business information.
Substation name	Pleasant View
Substation zone	Dominion
Substation upgrade scope	Upgrade Pleasant View Transformer 1 (500/230kV) with 1440 MVA transformer to remove violation and add Transformer 2 (500/230kV) with 1440 MVA at existing Pleasant View substation

Transformer Information

	Name	Capacity (MVA)		
Transformer	transformer 1	1440/1440		
	High Side	Low Side	Tertiary	
Voltage (kV)	500	230		
New equipment description	Upgrade Pleasant View Transformer 1 (500/230kV) with 1440 MVA transformer to remove violation and add Transformer 2 (500/230kV) with 1440 MVA at existing Pleasant View substation			
Substation assumptions	Space within the substation fence appears is available.			
Real-estate description	No expansion of substation fence anticipated.			
Construction responsibility	Proprietary business information.			
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process			
Component Cost Details - In Current Year \$				
Engineering & design	Proprietary business information.			
Permitting / routing / siting	Proprietary business information.			
ROW / land acquisition	Proprietary business information.			
Materials & equipment	Proprietary business information.			
Construction & commissioning	Proprietary business information.			

Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Substation Upgrade Component

Component title	50g - Add 2nd Transformer at existing Goose Creek substation
Project description	Proprietary business information.
Substation name	Goose Creek
Substation zone	Dominion
Substation upgrade scope	Add 2nd Transformer (1440 MVA) at existing Goose Creek substation to remove violation

Transformer Information

	Name	Capacity (MVA)		
Transformer	transformer 2	1440/1440		
	High Side	Low Side	Tertiary	
Voltage (kV)	500	230		
New equipment description	Add 2nd Transformer (1440 MVA) at existing Goose Creek substation to remove violation			
Substation assumptions	Space within the substation fence appears is available.			
Real-estate description	No expansion of substation fence anticipated.			
Construction responsibility	Proprietary business information.			
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process			

Component Cost Details - In Current Year \$

Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Transmission Line Upgrade Component

Component title	50P - Red Lion to Hope Creek 500 kV Upgrade
Project description	Proprietary business information.
Impacted transmission line	Red Lion - Hope Creek
Point A	Red Lion
Point B	Hope Creek
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Incumbent / Current Transmission owner specific

Hardware plan description

Utilize existing line hardware to extent possible.

Tower line characteristics

Utilize existing towers to extent practicable.

Proposed Line Characteristics

Designed

Operating

Voltage (kV)

500.000000

500.000000

Normal ratings

Emergency ratings

Summer (MVA)

4295.000000

4357.000000

Winter (MVA)

5066.000000

5196.000000

Conductor size and type

Incumbent / Transmission Owner to select conductor to achieve the required ratings.

Shield wire size and type

Utilize existing shield wire to extent practicable.

Rebuild line length

23.7

Rebuild portion description

Proposing to upgrade limiting elements to achieve specific rating.

Right of way

Use of existing ROW to extent practicable.

Construction responsibility

Proprietary business information.

Benefits/Comments

Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design

Proprietary business information.

Permitting / routing / siting

Proprietary business information.

ROW / land acquisition

Proprietary business information.

Materials & equipment

Proprietary business information.

Construction & commissioning

Proprietary business information.

Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Transmission Line Upgrade Component

Component title	50i - Lady Smith CT to St. John's 230kV Upgrade
Project description	Proprietary business information.
Impacted transmission line	Lady Smith CT - St. John's 230kV
Point A	Lady Smith
Point B	St John's
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000

	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	12.5	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	
Contingency	Proprietary business information.	
Total component cost	\$5,000,000.00	
Component cost (in-service year)	\$5,519,064.00	

Transmission Line Upgrade Component

Component title	50j - Lady Smith CT to Summit 230 kV Upgrade
Project description	Proprietary business information.
Impacted transmission line	Lady Smith CT - Summit 230kV
Point A	Lady Smith
Point B	Summit
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	

Rebuild line length	10.8
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.
Right of way	Use of existing ROW to extent practicable.
Construction responsibility	Proprietary business information.
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Transmission Line Upgrade Component

Component title	50k - Cashes's Corner to Hollymeade 230kV upgrade
Project description	Proprietary business information.
Impacted transmission line	Cashes's Corner - Hollymeade 230kV
Point A	Cashes's Corner
Point B	Hollymeade

Point C

Terrain description

Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage

230

Conductor size and type

Incumbent / Current Transmission owner specific

Hardware plan description

Utilize existing line hardware to extent possible.

Tower line characteristics

Utilize existing towers to extent practicable.

Proposed Line Characteristics

Designed

Operating

Voltage (kV)

230.000000

230.000000

Normal ratings

Emergency ratings

Summer (MVA)

1573.000000

1809.000000

Winter (MVA)

1648.000000

1896.000000

Conductor size and type

Incumbent / Transmission Owner to select conductor to achieve the required ratings.

Shield wire size and type

Utilize existing shield wire to extent practicable.

Rebuild line length

12.66

Rebuild portion description

Proposing to upgrade limiting elements to achieve specific rating.

Right of way

Use of existing ROW to extent practicable.

Construction responsibility

Proprietary business information.

Benefits/Comments

Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design

Proprietary business information.

Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Transmission Line Upgrade Component

Component title	501 - Cashes's Corner to Gordonsville 230kV upgrade
Project description	Proprietary business information.
Impacted transmission line	Cashes's Corner - Gordonsville 230kV
Point A	Cashes's Corner
Point B	Gordonsville
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	2.8	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	

Contingency	Proprietary business information.
Total component cost	\$1,400,000.00
Component cost (in-service year)	\$1,545,338.00

Transmission Line Upgrade Component

Component title	50m - Charlottesville to Proffit DP 230kV upgrade
Project description	Proprietary business information.
Impacted transmission line	Charlottesville to Proffit DP 230kV
Point A	Charlottesville
Point B	Proffit DP
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000

Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	15.8	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	

Component Cost Details - In Current Year \$

Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$5,000,000.00
Component cost (in-service year)	\$5,519,064.00

Transmission Line Upgrade Component

Component title	50n - Remington CT to Remington 230kV upgrade
Project description	Proprietary business information.

Impacted transmission line	Remington CT to Remington 230kV
Point A	Remington CT
Point B	Remington
Point C	

Terrain description	Work required is within existing ROW.
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Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	0.54	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	

Construction responsibility	Proprietary business information.
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$1,134,000.00
Component cost (in-service year)	\$1,251,724.00

Transmission Line Upgrade Component

Component title	50n - Remington CT to GIM Run 230kV upgrade
Project description	Proprietary business information.
Impacted transmission line	Remington CT to GIM Run 230kV
Point A	Remington CT
Point B	GIM Run
Point C	
Terrain description	Work required is within existing ROW.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Incumbent / Current Transmission owner specific
Hardware plan description	Utilize existing line hardware to extent possible.
Tower line characteristics	Utilize existing towers to extent practicable.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings.	
Shield wire size and type	Utilize existing shield wire to extent practicable.	
Rebuild line length	1.7	
Rebuild portion description	Proposing to upgrade limiting elements to achieve specific rating.	
Right of way	Use of existing ROW to extent practicable.	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	

Component Cost Details - In Current Year \$

Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.

Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	\$1,400,000.00
Component cost (in-service year)	\$1,545,338.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary Company Information

Financial Information

Capital spend start date	09/2023
Construction start date	07/2025
Project Duration (In Months)	57

Cost Containment Commitment

Cost cap (in current year)	Proprietary business information.
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Cost cap (in-service year)

Proprietary business information.

Components covered by cost containment

1. Combination of PEBO 220 + WOP 1F + SOP 8E - NEETMA

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	No
Escalation	No
Additional Information	Proprietary business information.
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary business information.
Additional cost containment measures not covered above	Proprietary business information.

Additional Comments

None