

## Project 2012-13- Nuclear Plant Interface Coordination

### VRF and VSL Justifications

Note: Justifications for the requirements in which VRFs and VSLs that were changed are provided in the document below. The VRFs and VSLs for Requirements R2, R3, R4, and R5 were not substantively changed from the currently effective NUC-001-2.1 and as a result no additional justification has been provided.

#### VRF and VSL Justifications – NUC-001-3, R1.

Proposed VRF	
NERC VRF Discussion	R1 is a planning requirement that mandates Nuclear Power Plant Generator Operators provide their respective transmission entities with a copy of their NPIRs and verify receipt. Interface between Nuclear Power Plant Generator Operators and transmission entities is important to ensure the safe and reliable operation as well as the startup and shutdown of nuclear power plants. If this requirement was violated, it could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines.
FERC VRF G1 Discussion	<b>Guideline 1- Consistency w/ Blackout Report R1</b> Requirement R1 establishes communications protocols and data exchange.
FERC VRF G2 Discussion	<b>Guideline 2- Consistency within a Reliability Standard</b> Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	<b>Guideline 3- Consistency among Reliability Standards</b> There are no other standards which address Nuclear Plant Interface Coordination.
FERC VRF G4 Discussion	<b>Guideline 4- Consistency with NERC Definitions of VRFs</b> This is a planning requirement that requirement if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system.

VRF and VSL Justifications – NUC-001-3, R1.			
FERC VRF G5 Discussion	<b>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation</b> Requirement R1 contains only one objective which is to require that Nuclear Plant Generator Operator’s provide their proposed NPIRs to their respective Transmission Entities.		
Proposed VSL			
Lower	Moderate	High	Severe
The Nuclear Plant Generator Operator provided the NPIR's to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to two of the applicable entities unless there was only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs.

**VRF and VSL Justifications – NUC-001-3, R1.**

<b>VRF and VSL Justifications – NUC-001-3, R1.</b>	
<p><b>FERC VSL G1</b>            Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any a Nuclear Plant Generator Operator provided its NPIRs to its respective transmission entities. The VSL is varied based on the number of transmission entities the NPIRs were or were not provided. If a Nuclear Plant Generator Operator failed to provide any NPIRs to its transmission entities it is a Severe Violation.</p>
<p><b>FERC VSL G2</b>            Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties            Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent            Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>Guideline 2a:            The VSL assignment for R1 is not binary.</p> <p>Guideline 2b:            The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

## VRF and VSL Justifications – NUC-001-3, R1.

<b>FERC VSL G3</b> Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R1.
<b>FERC VSL G4</b> Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
<b>FERC VSL G5</b> Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R1.

<p><b>FERC VSL G6</b> VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence</p>	<p>The requirement does not address cyber security protection.</p>
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VRF and VSL Justifications – NUC-001-3, R6.

Proposed VRF	
<p>NERC VRF Discussion</p>	<p>Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.</p>
<p>FERC VRF G1 Discussion</p>	<p><b>Guideline 1- Consistency w/ Blackout Report</b> Requirement R6 is consistent with the Blackout Report because it mandates data exchange.</p>
<p>FERC VRF G2 Discussion</p>	<p><b>Guideline 2- Consistency within a Reliability Standard</b> Only one VRF is assigned for this requirement.</p>

VRF and VSL Justifications – NUC-001-3, R6.			
FERC VRF G3 Discussion	<p><b>Guideline 3- Consistency among Reliability Standards.</b> There are no other standards which address Nuclear Plant Interface Coordination</p>		
FERC VRF G4 Discussion	<p><b>Guideline 4- Consistency with NERC Definitions of VRFs</b> Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.</p>		
FERC VRF G5 Discussion	<p><b>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation</b> This requirement is based on one obligation which is for Transmission Entities and Nuclear Plant Generator Operators to coordinate outages and maintenance activities.</p>		
Proposed VSL			
Lower	Moderate	High	Severe
N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A

**VRF and VSL Justifications – NUC-001-3, R6.**

<b>VRF and VSL Justifications – NUC-001-3, R6.</b>	
<p><b>FERC VSL G1</b> Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>Based on the VSL Guidance, the SDT developed two VSLs based on if a Nuclear Plant Generator Operator or a Transmission Entity failed to provide a maintenance or outage schedule (Moderate Violation) or if a Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.</p>
<p><b>FERC VSL G2</b> Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>Guideline 2a: The VSL assignment for R6 is not binary.</p> <p>Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

**VRF and VSL Justifications – NUC-001-3, R6.**

<p><b>FERC VSL G3</b> Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</p>	<p>The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R6.</p>
<p><b>FERC VSL G4</b> Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</p>	<p>The VSL is based on a single violation and not cumulative violations</p>
<p><b>FERC VSL G5</b> Requirements where a single lapse in protection can compromise computer network security, i.e., the ‘weakest link’ characteristic, should apply binary VSLs</p>	<p>The requirement does not address cyber security protection.</p>

VRF and VSL Justifications – NUC-001-3, R6.

<p><b>FERC VSL G6</b> VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence</p>	<p>The requirement does not address cyber security protection.</p>
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VRF and VSL Justifications – NUC-001-3, R7.

Proposed VRF	
<p>NERC VRF Discussion</p>	<p>Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures</p>
<p>FERC VRF G1 Discussion</p>	<p><b>Guideline 1- Consistency w/ Blackout Report</b> Requirement R7 is consistent with the Blackout Report because it mandates data exchange.</p>
<p>FERC VRF G2 Discussion</p>	<p><b>Guideline 2- Consistency within a Reliability Standard</b> Only one VRF is assigned for this requirement.</p>
<p>FERC VRF G3 Discussion</p>	<p><b>Guideline 3- Consistency among Reliability Standards.</b> There are no other standards which address Nuclear Plant Interface Coordination</p>

VRF and VSL Justifications – NUC-001-3, R7.

VRF and VSL Justifications – NUC-001-3, R7.			
FERC VRF G4 Discussion	<p><b>Guideline 4- Consistency with NERC Definitions of VRFs</b>                  Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.</p>		
FERC VRF G5 Discussion	<p><b>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation</b>                  The only obligation within this requirement is that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.</p>		
<b>Proposed VSL</b>			
<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>proposed</u> changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>actual</u> changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that <u>may</u> impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of <u>actual</u> changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that <u>directly impact</u> the ability of the electric system to meet the NPIRs.

**VRF and VSL Justifications – NUC-001-3, R7.**

<b>VRF and VSL Justifications – NUC-001-3, R7.</b>	
<p><b>FERC VSL G1</b>            Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>Based on the VSL Guidance, the SDT developed three VSLs based on if a Nuclear Power Plant Generator Operator failed to inform a Transmission Entity of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.</p>
<p><b>FERC VSL G2</b>            Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties            Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent            Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>Guideline 2a:            The VSL assignment for R7 is not binary.</p> <p>Guideline 2b:            The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

## VRF and VSL Justifications – NUC-001-3, R7.

<b>FERC VSL G3</b> Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R7.
<b>FERC VSL G4</b> Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
<b>FERC VSL G5</b> Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R7.

<p><b>FERC VSL G6</b> VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence</p>	<p>The requirement does not address cyber security protection.</p>
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VRF and VSL Justifications – NUC-001-3, R8.

Proposed VRF	
<p>NERC VRF Discussion</p>	<p>Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. . If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.</p>
<p>FERC VRF G1 Discussion</p>	<p><b>Guideline 1- Consistency w/ Blackout Report</b> Requirement R8 is consistent with the Blackout Report because it mandates data exchange.</p>
<p>FERC VRF G2 Discussion</p>	<p><b>Guideline 2- Consistency within a Reliability Standard</b> Only one VRF is assigned for this requirement.</p>
<p>FERC VRF G3 Discussion</p>	<p><b>Guideline 3- Consistency among Reliability Standards.</b> There are no other standards which address Nuclear Plant Interface Coordination</p>
<p>FERC VRF G4 Discussion</p>	<p><b>Guideline 4- Consistency with NERC Definitions of VRFs</b></p>

VRF and VSL Justifications – NUC-001-3, R8.			
	Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. <del>–</del> If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.		
FERC VRF G5 Discussion	<b>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation</b> The only obligation within this requirement is that Transmission Entities inform their applicable Nuclear Power Generator Operators of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.		
Proposed VSL			
Lower	Moderate	High	Severe
The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of <u>actual</u> changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that <u>may</u> impact the ability of the electric system to meet the NPIRs.	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of <u>actual</u> changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that <u>directly impacts</u> the ability of the electric system to meet the NPIRs.

**VRF and VSL Justifications – NUC-001-3, R8.**

<b>VRF and VSL Justifications – NUC-001-3, R8.</b>	
<p><b>FERC VSL G1</b>            Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>Based on the VSL Guidance, the SDT developed three VSLs based on if a Transmission Entity failed to inform a Nuclear Power Plant Generator Operator of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.</p>
<p><b>FERC VSL G2</b>            Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties            Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent            Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>Guideline 2a:            The VSL assignment for R8 is not binary.</p> <p>Guideline 2b:            The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

## VRF and VSL Justifications – NUC-001-3, R8.

<b>FERC VSL G3</b> Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R8.
<b>FERC VSL G4</b> Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
<b>FERC VSL G5</b> Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R8.

<p><b>FERC VSL G6</b> VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence</p>	<p>The requirement does not address cyber security protection.</p>
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VRF and VSL Justifications – NUC-001-3, R9.

Proposed VRF	
<p>NERC VRF Discussion</p>	<p>Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.</p>
<p>FERC VRF G1 Discussion</p>	<p><b>Guideline 1- Consistency w/ Blackout Report</b> Requirement R9 is consistent with the Blackout Report because it mandates data exchange.</p>
<p>FERC VRF G2 Discussion</p>	<p><b>Guideline 2- Consistency within a Reliability Standard</b> Only one VRF is assigned for this requirement.</p>
<p>FERC VRF G3 Discussion</p>	<p><b>Guideline 3- Consistency among Reliability Standards.</b> There are no other standards which address Nuclear Plant Interface Coordination</p>
<p>FERC VRF G4 Discussion</p>	<p><b>Guideline 4- Consistency with NERC Definitions of VRFs</b></p>

VRF and VSL Justifications – NUC-001-3, R9.			
	Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.		
FERC VRF G5 Discussion	<b>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation</b> This requirement only has one obligation which is for Nuclear Power Plant Generator Operators and Transmission Entities to include all of the mandated elements within R9 in their Agreements in aggregate.		
Proposed VSL			
Lower	Moderate	High	Severe
N/A	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include up to 20% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include greater than 20%, but less than 40% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include 40% or more of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.

**VRF and VSL Justifications – NUC-001-3, R9.**

<b>VRF and VSL Justifications – NUC-001-3, R9.</b>	
<p><b>FERC VSL G1</b>            Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any Nuclear Power Plant Generator Operators and Transmission entities failed to include the elements listed within R9. The VSL is varied based on the percentage of sub-components that were not included.</p>
<p><b>FERC VSL G2</b>            Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties            Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent            Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>Guideline 2a:            The VSL assignment for R9 is not binary.</p> <p>Guideline 2b:            The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

## VRF and VSL Justifications – NUC-001-3, R9.

<b>FERC VSL G3</b> Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R9.
<b>FERC VSL G4</b> Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
<b>FERC VSL G5</b> Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

## VRF and VSL Justifications – NUC-001-3, R9.

**FERC VSL G6**

VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence

The requirement does not address cyber security protection.