

## Consideration of Comments on Initial Ballot — Interpretation of TPL-002-0a for PacifiCorp (Project 2009-14)

### Summary Consideration:

The interpretation drafting team has reviewed the comments received from the first ballot of the interpretation. For the most part, these commenters agreed with the drafting team’s interpretation and were merely suggesting the addition of explanatory text to the interpretation statements. While the interpretation drafting team is generally in agreement with the additional text suggested by some commenters, it is the belief of the team that the suggested text does not change the interpretation or add to its comprehension. Therefore, no changes have been made to the interpretation language posted for the first ballot. .

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

Voter	Entity	Segment	Vote	Comment
Rebecca Berdahl	Bonneville Power Administration	3	Affirmative	BPA supports the technical discussion developed by Duke Energy as attached: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed “...with Normal Clearing.” Clear guidance as to the meaning of “Normal Clearing” is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, “[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems.” In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, “Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended.” (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to “Include the effects of existing and planned protection systems,

<sup>1</sup> The appeals process is in the Reliability Standards Development Procedure: [http://www.nerc.com/files/RSDP\\_V6\\_1\\_12Mar07.pdf](http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf).

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				<p>including any backup or redundant systems.” As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with “Normal Clearing,” that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay) does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Requirement 1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems considered must be limited to those that act only under Normal Clearing conditions. To interpret TPL-002 in another way, i.e., to take failure of the primary protection into account at the Category B level in Table I, would mean that all protection system components theoretically subject to failures, unless mitigated by redundancy, would need to be modeled as having failed. This would in turn mean that proper functioning of the Normal Clearing protection scheme as designed would never be analyzed, a clearly illogical result, and not the result that Category B was intended to simulate. The study of the reliability of protection systems and potential failure of their components should be the subject of a separate standard or requirements, and there is much to consider in establishing those. In that respect, Duke supports the current NERC Standard Authorization Request (SAR) for Reliability of Protection Systems.</p>

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Louis S Slade	Dominion Resources, Inc.	6	Affirmative	Dominion agrees with the draft interpretation in that TPL-002 and the associated Category B assessments should be made as stated with Normal Clearing of the protection systems. Normal clearing times are when the relays operate as designed. In the current TPL standards, TPL-002 Category B events are assessments of single contingency events. To consider anything beyond Normal Clearing times for protection systems would move those assessments into TPL-003 Category C events which are reserved for multiple contingencies. Specifically, TPL-003 categories C6 through C9 require the assessment of delayed clearing or protection system failures. In addition, Dominion agrees with the additional technical support offered in the comments of Duke Energy and recommends that the drafting team include that support in the record of discussion of the proposed interpretation.
William L. Thompson	Dominion Virginia Power	1	Affirmative	Dominion Virginia Power agrees with the draft interpretation in that TPL-002 and the associated Category B assessments should be made as stated with Normal Clearing of the protection systems. Normal clearing times are when the relays operate as designed. In the current TPL standards, TPL-002 Category B events are assessments of single contingency events. To consider anything beyond Normal Clearing times for protection systems would move those assessments into TPL-003 Category C events which are reserved for multiple contingencies. Specifically, TPL-003 categories C6 through C9 require the assessment of delayed clearing or protection system failures. In addition, Dominion Virginia Power agrees with the additional technical support offered in the comments of Duke Energy and recommends that the drafting team include that support in the record of discussion of the proposed interpretation.
Stanley M Jaskot	Entergy Corporation	5	Negative	I agree with the comments from Duke Energy

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Pat G. Harrington	BC Hydro and Power Authority	3	Negative	<p>I have cast a negative ballot because, although I agree with the interpretation proposed by the Standards Drafting Team (SDT), I believe that it would be worthwhile to provide a more detailed interpretation as suggested by Ed Ernst of Duke Energy in his 2009-May-28 email to the NERC Registered Ballot Body. This may avoid future requests for interpretation of this standard. I propose that the SDT consider the following wording for the interpretation in the next round of balloting: Conclusion TPL-002-0a requires that system studies or simulations be made to assess the impact of single contingencies with Normal Clearing. TPL-002 0a and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, [NERC, February 12, 2008 Glossary of Terms Used in Reliability Standards at page 11 (<a href="http://www.nerc.com/files/Glossary_12Feb08.pdf">http://www.nerc.com/files/Glossary_12Feb08.pdf</a>)]. Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems." In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper [NERC, PROTECTION SYSTEM RELIABILITY REDUNDANCY OF PROTECTION SYSTEM ELEMENTS 14 (Technical Paper) (2009; <a href="http://www.nerc.com/docs/standards/sar/Project2009-07_Tech_Paper_Reliability_of_Protection_Systems_2009Jan20.pdf">http://www.nerc.com/docs/standards/sar/Project2009-07_Tech_Paper_Reliability_of_Protection_Systems_2009Jan20.pdf</a>)] states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. TPL-002-0a R1.3.10 does require that all elements expected to be removed from service through normal operation of the Protection Systems be removed in simulations. This standard does not require an assessment of the Transmission System performance due to a Protection System failure or Protection System misoperation. Protection System failure or Protection System misoperation is addressed in TPL-003-0 "System Performance following Loss of Two or More Bulk Electric System Elements (Category C) and TPL-004-0 "System Performance</p>

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				<p>Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements (Category D). Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or redundant systems." As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with "Normal Clearing," that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay) does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems considered must be limited to those that act only under Normal Clearing conditions. TPL-002-0a R1.3.10 does not require simulating anything other than Normal Clearing when assessing the impact of a Single Line Ground (SLG) or 3-Phase (3<math>\bar{A}</math>) Fault on the performance of the Transmission System. To interpret TPL-002 in another way, i.e., to take failure of the primary protection into account at the Category B level in Table I, would mean that all protection system components theoretically subject to failures, unless mitigated by redundancy, would need to be modeled as having failed. This would in turn mean that proper functioning of the Normal Clearing protection scheme as designed would never be analyzed, a clearly illogical result, and not the result that Category B was intended to simulate. In regards to PacifiCorp's comments on the material impact associated with this interpretation, the interpretation team has the following comment: Requirement R2.1 requires "a written summary of plans to achieve the required system performance," including a schedule for implementation and an expected in-service date that considers lead times necessary to implement the plan. Failure to provide such summary may lead to noncompliance that could result in penalties and sanctions. Thank you for considering this suggestion, -Pat Harrington, B.C. Hydro, Vancouver, Canada.</p>

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Richard J. Kafka	Potomac Electric Power Co.	1	Affirmative	Pepco Holdings supports the comments of Duke and supports the current NERC Standard Authorization Request (SAR) for Reliability of Protection Systems.
Hubert C. Young	South Carolina Electric & Gas Co.	3	Affirmative	SCE&G agrees with the comments submitted by Duke Energy on this matter.
John D. Martinsen	Public Utility District No. 1 of Snohomish County	4	Affirmative	Snohomish County Public Utility District agrees with the draft interpretation. The District also supports Duke's proposal to include additional technical support as part of the interpretation. However due to the current confusion with TPL-002-0a the District supports moving to the second/recirculation ballot if the interpretation is approved in this initial ballot, per the NERC Reliability Standards Development Procedure. The District also supports a new effort to address the inclusion of additional technical support material proposed by Duke in a new process.
Paul B. Johnson	American Electric Power	1	Affirmative	TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems." In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or

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				<p>redundant systems.” As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with “Normal Clearing,” that is, no failure is assumed. During Normal Clearing, a backup relay does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Requirement 1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems</p>
Brock Ondayko	AEP Service Corp.	5	Affirmative	<p>TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed “...with Normal Clearing.” Clear guidance as to the meaning of “Normal Clearing” is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, “[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems.” In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, “Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended.” (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to “Include the effects of existing and planned protection systems, including any backup or redundant systems.” As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with “Normal Clearing,” that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay)</p>

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Donald S. Watkins	Bonneville Power Administration	1	Affirmative	<p>TPL-002A Request for Interpretation by PacifiCorp Bonneville Power Administration (BPA) Comments - 06-01-09 BPA agrees with the draft interpretation. BPA supports the technical discussion developed by Duke Energy as attached: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems." In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of</p>



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Francis J. Halpin	Bonneville Power Administration	5	Affirmative	<p>TPL-002A Request for Interpretation by PacifiCorp Bonneville Power Administration (BPA) Comments - 06-01-09 BPA agrees with the draft interpretation. BPA supports the technical discussion developed by Duke Energy as attached: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems." In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or redundant systems." As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with "Normal Clearing," that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay) does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Requirement 1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems considered must be limited to those that act only under Normal Clearing conditions. To interpret TPL-002 in another way, i.e., to take</p>

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				<p>failure of the primary protection into account at the Category B level in Table I, would mean that all protection system components theoretically subject to failures, unless mitigated by redundancy, would need to be modeled as having failed. This would in turn mean that proper functioning of the Normal Clearing protection scheme as designed would never be analyzed, a clearly illogical result, and not the result that Category B was intended to simulate. The study of the reliability of protection systems and potential failure of their components should be the subject of a separate standard or requirements, and there is much to consider in establishing those. In that respect, Duke supports the current NERC Standard Authorization Request (SAR) for Reliability of Protection Systems.</p>
Brenda S. Anderson	Bonneville Power Administration	6	Affirmative	<p>TPL-002A Request for Interpretation by PacifiCorp Bonneville Power Administration (BPA) Comments - 06-01-09 BPA agrees with the draft interpretation. BPA would like to include additional technical support as part of the interpretation, and recommends adding the following discussion: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems." In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or redundant systems." As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal</p>

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Edward P. Cox	AEP Marketing	6	Affirmative	<p>We agree with the draft interpretation. We would like to include additional technical support as part of the interpretation, and recommends adding the following discussion: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems." NERC, February 12, 2008 Glossary of Terms Used in Reliability Standards at 11. In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration</p>

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				<p>Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended." NERC, Protection System Reliability Redundancy of Protection System Elements 14 (Technical Paper) (2009). (Emphasis added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or redundant systems." As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with "Normal Clearing," that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay) does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Requirement 1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems considered must be limited to those that act only under Normal Clearing conditions. To interpret TPL-002 in another way, i.e., to take failure of the primary protection into account at the Category B level in Table I, would mean that all protection system components theoretically subject to failures, unless mitigated by redundancy, would need to be modeled as having failed. This would in turn mean that proper functioning of the Normal Clearing protection scheme as designed would never be analyzed, a clearly illogical result, and not the result that Category B was intended to simulate. The study of the reliability of protection systems and potential failure of their components should be the subject of a separate standard or requirements, and there is much to consider in establishing those. In that respect, we support the current NERC Standard Authorization Request (SAR) for Reliability of Protection Systems.</p>

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David Godfrey	PacifiCorp Energy	5	Affirmative	PacifiCorp supports and agrees with the draft interpretation that has been posted for pre-ballot review. The following provides further technical support for ratification of the draft interpretation: The draft interpretation states: "TPL-002-0a requires that System studies or simulations be made to assess the impact of single Contingency operation with Normal Clearing. TPL-002-0a R1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. " Requirement 1.3.10 must be read in the context of Table I, Category B (Normal Clearing) of TPL-002. Requirement 1.3.10 states that assessments are to "Include the effects of existing and planned protection systems, including any backup or redundant systems." The TPL-002 Category B analysis is performed with Normal Clearing as stated in Table 1. The Normal Clearing definition states the protection system must be analyzed consistent with proper functioning and with "Normal Clearing." This means that no failure is assumed with Normal Clearing. Requirement 1.3.10 requires that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. PacifiCorp supports the current NERC Standard development effort underway via the Standard Authorization Request (SAR) for Reliability of Protection Systems. PacifiCorp believes that this is an appropriate avenue to explore whether a separate reliability standard or new requirement should be adopted that would require studies to determine what level of reliability and redundancy is necessary for protection systems and potential failure of their components.
Henry Ernst-Jr	Duke Energy Carolina	3	Affirmative	Duke Energy agrees with the draft interpretation. Duke would like to include additional technical support as part of the interpretation, and recommends adding the following discussion: TPL-002 and the associated Category B section of Table I state that the specific contingencies associated with Category B are to be analyzed "...with Normal Clearing." Clear guidance as to the meaning of "Normal Clearing" is readily available from multiple sources. According to the NERC Glossary of Terms Used in Reliability Standards, Normal Clearing is defined as, "[a] protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protections systems."(footnote 1).In addition to the NERC Glossary of Terms definition of Normal Clearing, a January 2009 NERC technical paper states, "Normal clearing time is a Protection System mode of operation that does not take into consideration Protection System failure, and assumes that the Protection System is fully functional and will operate as designed and intended."(footnote 2)(Emphasis

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				<p>added) It is clear from these statements that Normal Clearing does not include failures or improper functioning of the protection systems. Thus, Protection System functions that occur only when another Protection System fails to operate as designed are not included for Category B. Because R1.3.10 is part of TPL-002, it must be read in the context of Table I Category B, which specifies Normal Clearing. Requirement 1.3.10 states that assessments are to “Include the effects of existing and planned protection systems, including any backup or redundant systems.” As stated above, the TPL-002 Category B analysis is performed with Normal Clearing. As the definition for Normal Clearing explains, the protection system must be analyzed consistent with proper operation, and with “Normal Clearing,” that is, no failure is assumed. During Normal Clearing, a backup relay (which will have an intentional time delay relative to the primary relay) does not come into play because the primary relays will operate to clear the fault before the backup relays, with the designed intentional time delay, operate. In the context of R1.3.10, there is no effect of backup relaying because the primary or redundant protection will act to properly clear the fault. Requirement 1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations. Faulted elements may be removed by primary, backup or redundant protection systems; however, for Category B, the Protection Systems considered must be limited to those that act only under Normal Clearing conditions. To interpret TPL-002 in another way, i.e., to take failure of the primary protection into account at the Category B level in Table I, would mean that all protection system components theoretically subject to failures, unless mitigated by redundancy, would need to be modeled as having failed. This would in turn mean that proper functioning of the Normal Clearing protection scheme as designed would never be analyzed, a clearly illogical result, and not the result that Category B was intended to simulate. The study of the reliability of protection systems and potential failure of their components should be the subject of a separate standard or requirements, and there is much to consider in establishing those. In that respect, Duke supports the current NERC Standard Authorization Request (SAR) for Reliability of Protection Systems. Footnotes: (1)NERC, February 12, 2008 Glossary of Terms Used in Reliability Standards at 11. (2)NERC, PROTECTION SYSTEM RELIABILITY REDUNDANCY OF PROTECTION SYSTEM ELEMENTS 14 (Technical Paper) (2009).</p>

**Response:** The interpretation drafting team agrees with the language that you have provided. However, the drafting team believes this type of

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background information is not necessary to derive the interpretation.				
Jacque Smith	ReliabilityFirst Corporation	10	Negative	I agree with most of the interpretation. The interpretation correctly states what TPL-002a R1.3.10 is not requiring, but is not providing guidance as to what it does require. Absent a statement of what it does require, the interpretation is incomplete. We would like to see a more complete interpretation of TPL-002-0a R1.3.10. I believe this language could be a requirement for verification of relay coordination, and where mis-coordination exists with back-up or redundant systems, the simulated outaging of all equipment that would be taken out of service due to this mis-coordination. It also could be a requirement that load transfer systems, which provide back-up and redundant service to customers, be included in the contingency analysis. It also could be a reference to relay schemes where a failure of communications could result in the breaker furthest from the fault being a few cycles slower in opening, than when communications function properly.
<p><b>Response:</b> The interpretation covers what is required under Requirement R1.3.10 by including the following background:</p> <p>Requirement R1.3 and sub-requirement R1.3.10 of standard TPL-002-0a contain three key obligations:</p> <ul style="list-style-type: none"> <li>• That the assessment is supported by “study and/or System simulation testing that addresses each of the following categories, showing System performance following Category B of Table 1 (single Contingencies).”</li> <li>• “...these studies and simulations shall be acceptable to the associated Regional Reliability Organization(s).”</li> <li>• “Include the effects of existing and planned Protection Systems, including any backup or redundant systems.”</li> </ul> <p>The interpretation drafting team agrees that due diligence regarding relay coordination and relay timing issues are crucial to the reliability of the System. Relay coordination is codified in the PRC series of standards. Expanding the interpretation to include a “requirement for verification of relay coordination” and to require the inclusion of an analysis of the effects of a lack of coordination is beyond the scope of an interpretation.</p>				



Voter	Entity	Segment	Vote	Comment
Brad Chase	Orlando Utilities Commission	1	Negative	OUC agrees with the overall intent of the interpretation and believes it properly and thoroughly responds to the questions asked. However OUC is concerned that in answering the question asked by PacifiCorp by rephrasing the question, the interpretation may have unintended consequences. The teams response was "TPL-002-0 R1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations". We are concerned that a literal reading of this interpretation in isolation, could result in a determination that any simulations that did not remove all elements as they would be removed by a protection system must be discarded as not valid. This is not the only way to apply R1.3 and R1.3.10, and it was probably not the teams intent to imply as such. OUC would appreciate clarification from the team on this matter in a comment response, and if a revision of the interpretation is made that clarification be incorporated into it.
Ballard Keith Mutters	Orlando Utilities Commission	3	Negative	OUC agrees with the overall intent of the interpretation and believes it properly and thoroughly responds to the questions asked. However OUC is concerned that in answering the question asked by PacifiCorp by rephrasing the question, the interpretation may have unintended consequences. The teams response was "TPL-002-0 R1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations". We are concerned that a literal reading of this interpretation in isolation, could result in a determination that any simulations that did not remove all elements as they would be removed by a protection system, even if the "incorrectly modeled" elements did not have any impact on the study area, must be discarded as not valid. In addition, this literal reading is problematic since many entities run simulations that include all single contingencies on their system and neighboring systems, and then, create additional simulations to model where multiple elements are removed from service as a part of a single contingency to supplement those cases. This literal reading would make it where the entire "single contingency" simulation would not be valid since it include one or more individual contingencies that were not modeled correctly, even though the planner modeled them correctly in the supplemental simulations. This is not the only way to apply R1.3 and R1.3.10, and it was probably not the team's intent to imply as such. OUC would appreciate clarification from the team on this matter in a comment response, and if a revision of the interpretation is made that clarification be incorporated into it.

Voter	Entity	Segment	Vote	Comment
Richard Kinas	Orlando Utilities Commission	5	Negative	OUC agrees with the overall intent of the interpretation and believes it properly and thoroughly responds to the questions asked. However OUC is concerned that in answering the question asked by PacifiCorp by rephrasing the question, the interpretation may have unintended consequences. The teams response was "TPL-002-0 R1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations". We are concerned that a literal reading of this interpretation in isolation, could result in a determination that any simulations that did not remove all elements as they would be removed by a protection system, even if the "incorrectly modeled" elements did not have any impact on the study area, must be discarded as not valid. In addition, this literal reading is problematic since many entities run simulations that include all single contingencies on their system and neighboring systems, and then, create additional simulations to model where multiple elements are removed from service as a part of a single contingency to supplement those cases. This literal reading would make it where the entire "single contingency" simulation would not be valid since it include one or more individual contingencies that were not modeled correctly, even though the planner modeled them correctly in the supplemental simulations. This is not the only way to apply R1.3 and R1.3.10, and it was probably not the team's intent to imply as such. OUC would appreciate clarification from the team on this matter in a comment response, and if a revision of the interpretation is made that clarification be incorporated into it.
<p><b>Response:</b> It was not the intent of the interpretation drafting team to add a requirement that doesn't exist. The drafting team's interpretation is that there are several ways to achieve compliance with the standard.</p>				