CONTENTS

Note: Questions refer to the 6 questions posed to industry on the SAR Comment Form, posted with SAR Version 2. Some of the question statements listed in this Table of Contents have been abbreviated or paraphrased from their original form. Question statements are shown in their entirety in the body of this document.

BACKGROUND

The Standard 500 **S**tandard **A**uthorization **R**equest **(SAR)**, "Assess Transmission Future Needs and Develop Transmission Plans", was posted for a second public comment period from May 5 through June 5, 2004. The SAR Drafting Team (DT) asked industry participants to provide feedback on the revisions made to the SAR through a special Comment Form posted with the SAR (Version 2).

The SAR (Version 2) Comment Form posed 6 questions, some of which were multi-part. There was a total of 28 sets of comments returned, with 121 individuals responding. The industry comments can be viewed in their original format at:

ftp://www.nerc.com/pub/sys/all_updl/standards/sar/TRNS_NDS_&_PLNS_DT_01_02_Comments.pdf

The Standard 500: "Assess Transmission Future Needs and Develop Transmission Plans" SAR Drafting Team met and considered each of the sets of responses to the questions posed with the SAR (Version 2) Comment Form. The questions were aimed at gathering feedback on the changes made (or proposed to be made) to the SAR.

In consideration of these industry comments, the SAR DT drafted a third version of the SAR for consideration by the Standards Authorization Committee (SAC). The SAR (Version 3), if accepted by the SAC, will serve as specifications for a Standards Drafting Team to draft the new Standard 500. The Standards Drafting Team will have access to all industry comments made on the SAR (Version 2), and well as the SAR DT's consideration of these comments.

FORMAT OF THIS DOCUMENT

In this document, comments from industry participants are shown under each question, along with the SAR Drafting Team's summary of results and consideration of the comments, provided in blue text immediately under each question.

In most cases, a single response has been provided to show how the comments were considered. In some cases, the SAR DT provided a short note to indicate how a unique comment was considered.

At the end of this document there is an Industry Commenter Key listing each entity, industry segment (e.g., Transmission Owner, Generator, ISO, etc.) and the individual names of those responding via the SAR Comment Form.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give EVERY comment serious consideration in this process! If you feel there has been an error or omission, you can contact John Twitchell in the NERC office. John can be reached at 609-452-8060 or at John.Twitchell@nerc.net. Or you can contact this SAR's DT's Facilitator, Margaret Stambach at 518-384-1062 or at mr.stambach@ieee.org.

Question 1(a): Do you believe that the events in Table I of existing Planning Standard I.A are classified correctly?

Question in its entirety:

1. Some members of the SAR drafting team believe that certain Category C events, as defined in Table 1 of existing Planning Standard I.A, are much less likely to occur than other events in Category C. It is felt that certain specific Cat. C events could be re-classified as Cat. D upon showing a low probability of occurrence (and low consequence) of these events.

(a). Do you believe that the events in Categories B, C & D are classified correctly? Comments?

SUMMARY:

YES (entities)	21	NO (entities)	5
YES (individuals)	76	NO (individuals)	42
	NO definitive answer	1 (1 entity, 1 individual) - AEP	

Consideration by the SAR DT:

The SAR DT is recommending a review of existing Table I, including the likelihood, duration and impact of events, as well as the definition of applicable ratings (A/R). This review may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.

Entities responding YES to Question 1(a) – the events in Table I are classified correctly:

AES, AESO, ALLEGHENY, ATC, CWLP, DUKE, ENTERGY, ERCOT, IMO, ISONE, ISO/RTO, KCPL, MAAC/Horakh, MAAC/Kuras, NPCC, NYSRC, R.Snow, SCGEM, SERC, SOUTHERNCO, SPP, TVA, WESTAR (21 entities, 76 individuals).

SOME ENTITIES RESPONDING YES TO QUESTION 1 (a) [THE EVENTS ARE CLASSIFIED CORRECTLY] HAD THE FOLLOWING ADDITIONAL COMMENTS:	
AESO:	Generally the B and C events are classified correctly. However, there is a need to reconsider the grouping of the D events on some consistent basis (e.g. such as using outage frequency as a determinant). There should also be some means to include double-circuit lines and buses as B events if their probability of outage is comparable to that of other category B contingencies.
ENTERGY, SERC, SOUTHERNCO, SCGEM:	Entities listed believe that Category C events are more likely to occur than Category D events and should require higher performance expectations.
MAAC/Horakh	Categories B, C and D should be renamed as follows – Category B – High Probability Contingency Event

	Category C – Medium Probability Contingency Event Category D – Low Probability Contingency Event The difference in the categories should NOT be stated in terms of how many elements are out of service, but rather should be stated in terms of the PROBABILITY of the initiating event that occurs. The difference in the categories is in the "stress" the system is allowed to experience and in the "fix" required. For B, a high probability event, stress should be low and the only fix allowed is system reinforcement. For D, a low probability event, severe system stress is allowed, and system reinforcement is not mandated. C is somewhere in between, a medium probability, with medium system stress permitted, and some loss of load and/or curtailment of transfers allowed in lieu of system reinforcement. Table I can then be simplified by removing the column labeled "Elements Out of Service", because it is unnecessary and not relative. Actually, the columns labeled "Thermal Limits", "Voltage Limits", "System Stable" and "Cascading Outages" can be eliminated too, because they are the same for each Category A, B and C (but notes for each column should be retained).
MAAC/Kuras:	I believe that an in depth investigation of the probability of each possible contingency occurring be investigated by NERC to determine each contingency's relative probability and those results used to re-rank the contingency list, if necessary.
R.Snow:	Without a rigorous Probabilistic Risk Analysis, moving any of these events to a category D event is bad practice. All of the events have occurred at one time or another, especially circuit breaker and bus faults. Moving them to a category D essentially removes them from requiring action to mitigate/solve the impact on reliability.
WESTAR**:**	"Loss of single component without a fault" should become Category B5 and be included in the listing of items in category C3 *{See similar comments: SPP comment under Question 4, Choice (2) and KCPL comment under Question 4, Choice (3)}.*

QUESTION 1(B): IF YOUR ANSWER TO THE ABOVE QUESTION IS NO, HOW WOULD YOU RE-CLASSIFY THE EVENTS?

Question in its entirety:

1. Some members of the SAR drafting team believe that certain Category C events, as defined in Table 1 of existing Planning Standard I.A, are much less likely to occur than other events in Category C. It is felt that certain specific Cat. C events could be re-classified as Cat. D upon showing a low probability of occurrence (and low consequence) of these events.

(a). Do you believe that the events in Categories B, C & D are classified correctly?

(b). If your answer to (a) is No, how would you re-classify the events? If you have data to support your answer, please provide contact information for the individual responsible for the data.

SUMMARY: 5 entities (42 individuals) answered NO to Question 1(a) and therefore responded to Question 1(b).

Also included in this section are two miscellaneous comments on whether events are classified correctly: one comment from AEP, who had no definitive answer to Question 1(a), and one comment from MAPP, who answered NO to Question 1(a).

Consideration by the SAR DT:

The SAR DT is recommending a review of existing Table I, including the likelihood, duration and impact of events, as well as the definition of applicable ratings (A/R). This review may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.

Entities responding NO to Question 1(a) – the events in Table I are NOT classified correctly:

AMEREN, BPA, MAPP, MEC and WECC (WECC-1 plus WECC-2). (5 entities, 42 individuals)

ENTITIES RESPONDING TO QUESTION 1(b) [i.e., ENTITIES RESPONDING NO TO QUESTION 1(a) - THE EVENTS ARE NOT CLASSIFIED CORRECTLY]	
Ameren	All category C outages that have a direct impact on serving load because of the system configuration (straight bus or tapped load) should be reclassified, including C-1, C-2, C-5, and C-9 to provide more latitude. For category C events, we should be more concerned that the system holds together and not that the local load may be at risk for these multiple contingency events.
BPA	Outage categories C1, C2 and C9 do not appear to be classified correctly as verified by the attached *outage probability data.* There is consistency between the categories except that C1, C2 and C9 outages have a much lower probability of occurrence than the other Category C outages. ***{See Attached Companion Document: Excel File – "BPAdata". Or contact: Marv Landauer, (503) 230-4105, mjlandauer@bpa.gov}***
MAPP & MEC	MAPP and MEC would reclassify certain low probability events such as Category C1 events, C2 events, certain Category C3 events (two transformers, transmission circuit plus a transformer, two transmission circuits, DC line plus a transformer, DC line plus a transmission circuit, and two DC lines), C6 events, C7 events, C8 events, and C9 events to either a new

	category between C and D with performance characteristics between that of the present Categories C and D or to Category D. *[MEC supports creating a new category between C & D].* MAPP and MEC would require that the interconnected transmission system be planned, designed, and constructed to protect for instability, cascading, and uncontrolled separation for the low probability events in the new sub-category. Regions should develop procedures for determining that systems are properly protected for instability, cascading and uncontrolled separation. MAPP & MEC believe the attached *outage probability data* supports this new reclassification by demonstrating that the events that MAPP & MEC recommend for reclassification are the low probability Category C events. ***{See Attached Companion Document: Word File – "MAPP-MECdata". Or contact: Tom Mielnik, (563) 333-8129, tcmielnik@midamerican.com}***
MEC	MidAmerican Energy believes the interconnected transmission system should be planned, designed, and constructed to withstand high probability events and to withstand low probability events with significant negative consequences. MidAmerican believes it is a waste of the ratepayers' money to plan, design, and construct the interconnected transmission system for low probability events without significant negative consequences.
WECC-1 & WECC-2	The Categories should be based on the probability of occurrence of the initiating events. A review of Table I (Standard I.A) shows that the contingencies in the same Categories seem to have very different probabilities of occurrence.
WECC-1	Category D needs to be split into two categories, the more probable Category D events should not be allowed to cascade. For example, the new "No Cascading" category should include: Loss of 2 units at a plant Loss of adjacent lines in a right of way Loss of multiple bus sections as a result of failure or delayed clearing of a bus tie or bus sectionalizing breaker. There is no defined performance level for 3 phase fault, stuck breaker, and loss of one line. For support of this position, see the NERC/WECC Planning Standards
WECC-2	A new category should be defined between Category C and Category D. The more probable Category D events and the less probable Category C events should be placed in this new category and not be allowed to cascade. This WECC group supports moving C.2 and C.9 to a new Category between the current C and D Categories. WECC Planning Standards do not support reclassification of C.3.

MISCELLANEOUS COMMENTS ON WHETHER EVENTS ARE CLASSIFIED CORRECTLY	
AEP	Need to see outage probability data in order to answer definitively. Based on good data, the probabilities of existing C and D events could be estimated. The events could then be grouped into higher probability events

	(Category C) and lower probability events (Category D). AEP would be able to provide some outage data to support this analysis. ***{Contact Ali Al-Fayez, Manager – Transmission Asset Performance (614 552-1649)}***
MAPP:	The definition of applicable ratings needs to be clarified. The SAR DT should also indicate if it is feasible to have different applicable ratings for different categories of events. The SAR DT should review the history of the original classification. This review should include all classes. If outage statistics are used to classify events, how many years of data are appropriate? If the data window is too small, the results will be skewed. Moreover, is it appropriate to use outage data for all these categories of events? Outage data over a long period of time may provide insight into equipment performance, but is it appropriate to reflect weather related contingency events – the data may not reflect the effect of a once in a 100 year storm? **Consideration by the SAR DT:** *The SAR DT is recommending that the new Standard clarify ambiguities in performance requirements, specifically cascading outages and A/R. We are also recommending the new Standard clarify that different ratings may be applicable to different categories of events, and perhaps to different types of events within a category (specified by entities in accordance with STD 600).*

Question 1(c): Which approach do you favor?: (1) Keep the same categories and re-classify certain events as Category D, (2) Create a new category between C & D, (3) Keep the same categories and allow for good cause exceptions.

Question in its entirety:

1. Some members of the SAR drafting team believe that certain Category C events, as defined in Table 1 of existing Planning Standard I.A, are much less likely to occur than other events in Category C. It is felt that certain specific Cat. C events could be re-classified as Cat. D upon showing a low probability of occurrence (and low consequence) of these events.

(c). Which of the following approaches do you favor regarding Table 1 of existing Planning standard I.A?
(1) Keep the same categories as now exist and re-classify the low probability (and low consequence) events as Category D events. Please explain your choice.
(2) Create a new category between C and D with performance characteristics between that of the present categories C and D. Please explain your choice.
(3) Keep the same categories as now exist, but allow for "good cause exceptions" upon showing a low probability of occurrence (and low consequence) of specific Category C events. Please explain your choice.

SUMMARY:

Entities supporting Choice (1)	4 (9 individuals)
Entities supporting Choice (2)	7 (46 individuals)
Entities supporting Choice (3)	6 (24 individuals)
Entities supporting NONE of the choices	11 (44 individuals)

Consideration by the SAR DT:

The SAR DT is recommending a review of existing Table I, including the likelihood, duration and impact of events, as well as the definition of applicable ratings (A/R). This review may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.

Since there was no clear consensus on how to address re-classification of events, the SAR DT feels that a thorough review of existing Table I will assure that events are properly classified for the new Standard.

Entities supporting Choice (1) – keep same categories and re-classify certain events as Cat. D

AEP, AMEREN, CWLP, MAPP (4 entities, 9 individuals)

ENTITIES SUPPORTING CHOICE (1) – KEEP SAME CATEGORIES AND RE-CLASSIFY CERTAIN EVENTS AS CATEGORY D	
AEP	Four categories are sufficient and generally understood by the industry. Specific changes that are supported by outage probabilities can be made, as appropriate, by moving Category C tests to Category D.
AMEREN	Reclassify C-1,C-2, and C-9 to category D (less probable events). C-3 (line and a generator combination) should be reclassified as category B event (more probable than other C-3 events. Also, why is a loss of a tower line with two circuits category C (C-5) while loss of a tower line with 3 circuits is category D (D-6), though a probability of loss of a tower line may be the same ? We may want to be consistent in categorizing the event – loss of a multi-circuit tower line.
CWLP	(No explanation given.)
MAPP	If the events are low probability, then some should be considered for moving to C or D.
MISCELLANEOUS COMMENT ON CHOICE (1) – KEEP SAME CATEGORIES & RE-CLASSIFY CERTAIN EVENTS AS CATEGORY D	
MEC	MidAmerican does NOT support this choice, since MEC believes that reclassifying less likely Category C events as Category D events will result in planners ignoring low-probability contingencies that result in significant consequences: cascading, uncontrolled separation, and instability.

Entities supporting Choice (2) – create new category between C & D.

AESO, BPA, CWLP, MAAC/Kuras, MAPP, MEC, WECC (WECC-1 plus WECC-2). (7 entities, 46 individuals)

ENTITIES SUPPORTING CHOICE (2) – CREATE A NEW CATEGORY BETWEEN C & D	
AESO	There are D contingencies that are probable although rare (e.g. loss of multiple circuits on separate tower lines on a common right-of-way). These contingencies may result in loss of load or generation but should not allow cascading. Other D contingencies such as loss of all lines on a multi-line corridor or the loss of a complete station would be difficult to contain. These events should be treated differently than the former.
BPA	The C2 (with respect to a bus section breaker failure) and the C9 outages should be in this new category. Although these outages have extremely low probability, they should not cause cascading. This is especially true of C2, which is a single contingency failure of a bus section breaker. Therefore we favor adding a new category between Level C and D (or moving these two outages to Level D) with performance requirements of no cascading and system stable but with no requirement to be within applicable ratings. ***[See similar comment from WECC-2 under Question 5, Regional Differences]***

CWLP	Multiple contingencies have lower and varying probabilities of occurrence.
MAAC/Kuras	This is the best choice of the ones mentioned here but see my comment in 1.(a) above for another approach. This approach allows for some levels of performance between C and D such as restricting the performance to "no cascading or system instability" for some C and maybe even D events.
MAPP & MEC	Improvements should be planned for those Category C events that are high probability events regardless of the consequences. Planners should also review all Category C events for instability, cascading, and uncontrolled separation. Improvements should be planned for those Category C events (both high probability and low probability events) which have significant consequences, that is, that result in instability, cascading, and uncontrolled separation.
MEC	The approach that results in the most appropriate transmission system design is the one recommended by MEC. It is MEC's belief that the intent of the drafting team that originally developed the existing NERC Planning Standards was to require the NERC member to plan to protect for instability, cascading, and uncontrolled separation for Category C events.
WECC-1 & WECC-2	A "No Cascading" performance requirement is needed for this new category. There are Category C events, which have a very low probability of occurrence. Such events, even if they occurred, should not lead to cascading, even though local facility ratings or voltage limits may be exceeded. Very often, the solution for such low probability contingencies would be to install a relay system to interrupt load or generation. The probability of relay misoperation to prevent potential problems resulting from the contingency may be higher than the probability of the contingency itself. Thus the impact on the users of the grid may not be significantly reduced. Nevertheless, the system reliability would be better served if we can add a category for such low probability contingencies (which would not result in cascading), and the risk of which is acceptable.

Entities supporting Choice (3) – keep same categories and allow for good cause exceptions.

ATC, BPA, DUKE, KCPL, SPP, TVA, WESTAR. (6 entities, 24 individuals).

{Note: BPA not counted in this choice. BPA counted in Choice (2) "New Category", since that is their preferred choice}

ENTITIES SUPPORTING CHOICE (3) – KEEP SAME CATEGORIES AND ALLOW FOR GOOD CAUSE EXCEPTIONS	
ATC	The outages listed in the existing categories are reasonable but, because we don't know all the specific details about a certain part of the system, there should be some mechanism to consider exceptions.
BPA	Although this is not our preferred choice, allowing the use of "good cause exceptions" (which we assume is the same as probabilistic methods which could move contingencies to a lower performance level although this is inconsistent with other statements in the SAR) to verify exceptions to the present categories would also be acceptable. For the C2 example, showing that these events statistically occur every 1200-1300 years and would not cause cascading problems on the system should provide enough evidence that a lower performance level is appropriate.

DUKE	Allow the flexibility for reasonable exceptions to the general categories based on frequency of occurrence. This may mean the possibility of a particular contingency moving up or down in category. This allowance permits appropriate exercise of engineering judgment in the planning process.
KCPL	KCPL supports the recommendation that the Standard should allow for the development and use of probabilistic planning methods in reliability assessment. However, KCP&L does not support any reclassification of the existing Categories. The probability of occurrence of some contingencies may, in actuality, be very low. However, this should not diminish the importance of their assessment in the Category that they are currently found.
SPP	SPP would like to see a definition of "good cause exceptions" at a minimum. SPP encourages the development of probabilistic techniques to assess reliability but caution needs to be exercised prior to implementation to ensure support from all stakeholders.
TVA	This "good cause exception" approach allows documentation of an assessment of low consequence to substitute for the expenditure of an unwarranted solution, but maintains the integrity of the event probability assessment. Since others may have different ideas of what is low probability, this approach would be best with sufficient justification of low probability.
WESTAR	Once an analysis has been performed, a subsequent "assessment" can easily dismiss low consequence events. However, low probability with high consequence should not be granted an exception. The initial premise of the Planning Standards did not contemplate probabilistic or Monte Carlo analysis. "Good Cause Exception" must be carefully defined before entities are allowed to shield high consequence events regardless of probability of occurrence.
MISCELLANEOUS COMMENTS ON CHOICE (3) - KEEP SAME CATEGORIES & ALLOW FOR GOOD CAUSE EXCEPTIONS	
AEP	"Good cause exceptions" can always be considered, but this approach should not be institutionalized.
MAPP & MEC	MAPP & MEC believe that allowing for "good cause exceptions" is not the preferable approach. We believe that the events listed by MAPP & MEC for reclassification are much less likely than the other Category C events generally throughout NERC. This means that these events should be reclassified in general throughout NERC and not just in certain "good cause exceptions". (Although, it should be noted that MAPP & MEC do support Regional Differences where appropriate.) Besides, there are issues associated with the development and utilization of a process for approving "good cause exceptions".
NYSRC	In accordance with the NERC process for developing reliability standards, an entity may include a Regional Difference as part of the NERC standard if there is such a condition. <u>Therefore, there is no need for the standard to include "good cause exceptions".</u>

Entities supporting NONE of the 3 choices:

ENTERGY, ERCOT, IMO, ISONE, ISO/RTO, MAAC/Horakh, NPCC, NYSRC, SCGEM, SERC, SOUTHERNCO, (11 entities, 44 individuals).

ENTITIES SUPPORTING NONE OF THE CHOICES - NO CHANGES TO CATEGORIES/EVENTS	
ENTERGY, SCGEM, SERC, SOUTHERNCO	Since the events are currently categorized correctly, above Questions 1 (b) and 1 (c) are not applicable. Entities listed agree that low consequence Category C events should be considered compliant. However, as we interpret Table I, a Category C event that results in low consequences (e.g. no cascading) is already considered compliant since entities can drop load or curtail firm transfers to return to applicable thermal or voltage ratings.
ERCOT, IMO, ISONE, ISO/RTO, NPCC, NYSRC	Any of the above three choices would weaken the present NERC standards. All entities listed take the position that there should be No Changes to Categories B, C, and D as they now exist in the present Planning Standards.
MAAC/Horakh	NONE OF THE ABOVE. Keep the three categories, but rename them as in 1.a. above. Adding an additional category would introduce too much confusion in planning the system. Assuming that the contingencies in B, C and D are already in their correct probability categories, no changes need to be made. If someone could prove that a contingency in B is Low Probability the same as the contingencies in D, that contingency could be moved.

QUESTION 2: DO YOU BELIEVE THE STANDARD SHOULD REQUIRE REPORTING ON *IMPLEMENTING* THE TRANSMISSION PLANS?

Question in its entirety:

2. Do you believe the standard should include requirements for reporting on the progress or status of *implementing* the plans developed in accordance with this standard?

SUMMARY:

YES (entities)	13	NO (entities)	13
YES (individuals)	60	NO (individuals)	53
	NO definitive answer	1 (1 entity, 7 individuals) - MAPP	

Consideration by the SAR DT:

There was no clear consensus on whether reporting on the progress or status of implementing the plans should be included in the Standard. This SAR Drafting Team is recommending that the new Standard address requirements for reporting (perhaps to the Regions) on the progress or status of implementing the plans, but such requirements should not impose undue burdens upon transmission entities.

Any such reporting requirements shall be consistent with the Resource & Transmission Adequacy's RTATF Recommendation #2: "Among other items, the new Reliability Standards should clearly define the key elements of an acceptable mitigation plan to achieve compliance with the standard(s) and a general process to ensure implementation of the mitigation plan".

Entities responding YES to Question 2 – the standard SHOULD require implementation reporting.

AEP, AMEREN, BPA, IMO, ISONE, ISO/RTO, ERCOT, KCPL, MAAC/Horakh, MAAC/Kuras, NPCC, NYSRC, R.Snow, SPP, WESTAR (13 entities, 60 individuals)

SOME ENTITIES RESPONDING YES TO QUESTION 2 [THE STANDARD SHOULD REQUIRE IMPLEMENTATION REPORTING] HAD THE FOLLOWING ADDITIONAL COMMENTS:	
AEP	The reporting requirements should not be burdensome, but they are needed to ensure a minimum level of accountability.
AMEREN	The reporting requirement should not be onerous.
BPA	A plan without a requirement to update progress on implementing the plan has little value. This is essential for an effective standard. This should not be an extensive reporting procedure and could easily be met during the subsequent compliance report.
KCPL	KCP&L supports a requirement for reporting the status of implementing the mitigation plans. On a regional basis, mitigation plans should be reported by the Transmission Planner, as a minimum, on an annual basis through the regional model building process and assessed through the regional

	assessment studies performed by the Regional Reliability Coordinator.
MAAC/Kuras	It's one thing to develop plans and another to follow through on them. PJM can offer suggestions on how this tracking could be accomplished.
R.Snow	Developing plans without a follow up program is a waste of time and money. One of the most telling comments from the August Blackout report was that a number of the items were the same as in other blackouts.
SPP	SPP supports this reporting requirement, but notes that this burden should not be imposed more frequently than annually.
WESTAR	Having a "plan" that is not implemented is of no value.

Entities responding NO to Question 2 – the standard SHOULD NOT require implementation reporting.

AES, AESO, ALLEGHENY, ATC, CWLP, DUKE, ENTERGY, MEC, SCGEM, SERC, SOUTHERNCO, TVA, WECC-1, WECC-2 (13 entities, 53 individuals)

SOME ENTITIES RESPONDING NO TO QUESTION 2 [THE STANDARD SHOULD NOT REQUIRE IMPLEMENTATION REPORTING] HAD THE FOLLOWING ADDITIONAL COMMENTS:	
AES	AES does not favor an implementation report. However, major facility additions, delayed additions, or deletions that effect the reliability of the system could be included as part of the regional form 715 base case yearly filings and listed as changes from last year's cases. This would allow older cases to easily be updated and used.
AESO	It is not clear to whom the reporting would go to and how it would be used. Normally, reporting would be required for the regulatory process in the affected jurisdiction. The scope of that reporting would not be limited to reliability only but also other aspects of the transmission plan (e.g. customer connections, efficiency improvements, etc).
ATC	While an entity should be implementing plans to maintain or improve the reliability required by the standards, having to report on the implementation could become quite complicated. Plans are often changing to meet changing system conditions, sometimes so much so that what seemed reasonable to do last year is replaced by entirely new plans.
MEC	MidAmerican Energy believes that this standard should not include requirements for reporting on the progress or status of implementing the plans developed in accordance with this standard. There are too many conditions beyond the control of the NERC member for this to be a part of a standard requiring compliance review. Complex environmental, regulatory, and political issues prevent many transmission facilities from being constructed or being constructed in a scheduled manner. The Not-In-My-Back-Yard philosophy has hit even the rural areas so that there is no part of the NERC area where a NERC member can confidently predict completion of transmission system improvements in plans. Further, conditions can change even during a year to such an extent that compliance review for implementation from one year to the next is problematic. Further, regulatory oversight provides for appropriate review of plan implementation anyway. MidAmerican urges that the SAR drafting team not pursue this well-meaning but problematic approach.

SCGEM, SOUTHERNCO	Too burdensome for the perceived benefits.
TVA	This reporting would constitute a logistical burden counterproductive to the total planning effort.
WECC-1 & WECC-2	Since many of the transmission plans are dependent upon factors such as, resource plans, local load projections, new technology, permitting, to name a few, it would not be meaningful to report on the status of implementation of a transmission plan. In any case, if a potential transmission problem is not solved, it will show up again in subsequent years, so there will be pressure to solve it. This continuous "certification" would ensure that any potential transmission problem, once identified, would not be left unsolved even without NERC requiring status reports on implementation.

MISCELLANEOUS COMMENT ON WHETHER THE STANDARD SHOULD REQUIRE IMPLEMENTATION REPORTING (Neither Yes/No Box Checked)	
MAPP	Requirements for reporting on the progress or status of implementing the plans should be left to the regions and appropriate regulatory bodies. The MAPP Regional Transmission Committee currently has a regional planning process for compliance for implementing transmission plans.

QUESTION 3: IF YOUR ANSWER TO *QUESTION 2* IS YES, HOW WOULD YOU PROPOSE ACCOUNTING FOR CHANGES IN A TRANSMISSION PLAN?

Question in its entirety:

3. If your answer to Question 2 is Yes, given that transmission plans change over time as modeling assumptions, systems and plans change, how would you propose accounting for changes in a Transmission Plan?

SUMMARY: 13 entities (60 individuals) answered YES to Question 2 and therefore responded to Question 3.

Consideration by the SAR DT:

There was no clear consensus on whether reporting on the progress or status of implementing the plans should be included in the Standard. This SAR Drafting Team is recommending that the new Standard address requirements for reporting (perhaps to the Regions) on the progress or status of implementing the plans, but such requirements should not impose undue burdens upon transmission entities.

Any such reporting requirements shall be consistent with the Resource & Transmission Adequacy's RTATF Recommendation #2: "Among other items, the new Reliability Standards should clearly define the key elements of an acceptable mitigation plan to achieve compliance with the standard(s) and a general process to ensure implementation of the mitigation plan".

Entities responding YES to Question 2 (The standard SHOULD require implementation reporting) and therefore responding to Question 3 (How would you account for changes in a Transmission Plan?).

AEP, AMEREN, BPA, ERCOT, IMO, ISONE, ISO/RTO, KCPL, MAAC/Horakh, MAAC/Kuras, NPCC, NYSRC, R.Snow, SPP, WESTAR (13 entities, 60 individuals)

ENTITIES RESPONDING TO QUESTION 3 – HOW WOULD YOU PROPOSE ACCOUNTING FOR CHANGES IN A TRANSMISSION PLAN? [i.e., ENTITIES RESPONDING YES TO QUESTION 2 - THE STANDARD SHOULD REQUIRE IMPLEMENTATION REPORTING]:	
AEP	A simple narrative explanation should be provided that explains what factors have eliminated the need for the transmission modification/addition or changed its timing. In cases where a modified solution has been developed, the Transmission Planner should demonstrate the effectiveness of the modified approach and compare to the original approach.
AMEREN	Provide the following: (i) Annual update with a short note to document changes. (ii) Smaller projects (cap bank addition, change of terminal equipment like switches, wavetrap, or CT) may be combined as a group in such reporting to avoid providing a long list of updates.
BPA	Once a transmission plan is identified in a compliance report, progress on that project should be reported in subsequent compliance reports. If system conditions change, this should be described along with the consequences to the proposed plans. If project need goes away, the project can be canceled.

	However, if the project need still exists and the responsible entity has not implemented a plan to correct the deficiency, it should be listed as non-compliant. Legitimate problems with regulatory and siting issues should be acceptable reasons for project delay.
ERCOT, IMO, ISONE, ISO/RTO, NPCC	All entities listed favor periodic transmission reviews to address changes in plans. In the northeast, the NPCC Annual Transmission Reviews address this and in addition NPCC keeps a "Major Projects List" to "track" BPS additions and modifications and includes transmission, generation and other major equipment identified as a BPS element. The entities suggest that the resultant NERC standard not be overly prescriptive in requirements for reporting progress/status on the standard and flexibility be afforded to allow various documentation and processes already in place to achieve compliance. They suggest it be done annually.
KCPL	Any out-of-cycle changes to the mitigation plan should be reported to the Reliability Coordinator and re-evaluated on an as-needed basis. Coordinated planning between other regions and entities will be critical.
MAAC/Horakh	Reporting should be on a "delay" basis. Known delays to the plan should be reported, along with the reason for the delay and use of alternate solutions.
MAAC/Kuras	A plan is a plan at that point in time. Plans change. Periodic checks of implementation of plans can uncover these plan changes that should be allowed.
NYSRC	Updated transmission plans should be reported along with compliance assessments as required.
R. Snow	When there is a significant change in the assumptions, the plan needs to be re-studied and revised as appropriate. The SAR must require such re-studies. Any plan is only as good as its assumptions. Whenever there is a significant change in the assumptions, the plan needs to be revised to account for the change. Having a plan that assumes there will be specific generation projects is worthless when those specific projects are changed, canceled or if other generation retires.
SPP	Although SPP is implementing a 2 year planning cycle, project updates are collected on an annual basis. To ensure compliance with reliability criteria, mitigation reviews are also provided on an annual basis consistent with the annual model building process. Updates due to new "out of cycle" projects or significant scope/timing changes associated with major projects in the approved regional expansion plan and its assessments are evaluated on an as-needed basis. Coordinated planning and model building using consistent definitions with neighboring regions/entities will be critical. Efforts should be undertaken to put data collection, modeling building and transmission assessment processes for neighboring regions/entities on the same cycles.
WESTAR	In the annual process to update power flow models, there are necessarily changes to the load forecast, use of the interconnected network, and financial constraints which must be taken into account. Reporting to the Regional Reliability Organization should include a discussion of substantive changes and reasons behind them. There should not be a judgment made by the RRO that the explanation is "adequate" so long as the explanation is made. The changes are critical information that must be taken into account when evaluating transmission service requests. Reporting should not be more frequent than the model-building cycle.

QUESTION 4: SHOULD THE REQUIREMENT TO CONSIDER PLANNED OUTAGES IN ADDITION TO EACH CONTINGENCY REMAIN PART OF THIS PLANNING STANDARD?

Question in its entirety:

4. Existing Planning Standard I.A requires: *"The systems must be capable of meeting Category C requirements while accommodating the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed".*

The SAR drafting team believes that it is impractical to exhaustively test for every contingency described in each category plus every conceivable planned outage. Should the requirement to consider planned outages in addition to each Category A through D contingency remain part of this planning standard?
(1) Yes, consider planned outages in all Categories A through D.
(2) Yes, consider planned outages in some Categories only – Please specify which Categories.
(3) No, do not consider planned outages in addition to each contingency in any Category.

SUMMARY:

Entities supporting Choice (1)	6 (16 individuals)
Entities supporting Choice (2)	15 (76 individuals)
Entities supporting Choice (3)	8 (27 individuals)

Miscellaneous Comment (No choice selected) – 1 entity (2 individuals) - Seminole

Consideration by the SAR DT:

The SAR Drafting Team believes there is confusion surrounding the planned outage requirement in Table I of the existing standard. The SAR DT is recommending that the new Planning Standard clarify the issue of how a planned outage should be used in a planning assessment.

The new Standard should specify whether the planned outage requirement should be retained for Categories B and C. If retained, the requirement should be clarified in such a way that it can be practically implemented. In particular, the Transmission Planner should not be required to exhaustively test their systems for every conceivable planned (including maintenance) outage in addition to every conceivable Category B and C contingency.

The new Standard should clarify that the planned outage requirement does not apply to Categories A and D.

Entities supporting Choice (1) – consider planned outages in ALL Categories A through D.

ERCOT, ISO/RTO, NYSRC, MAAC/Kuras, TVA (half of group), WESTAR (6 entities, 16 individuals)

ENTITIES SUPPORTING CHOICE (1) – CONSIDER PLANNED OUTAGES IN ALL CATEGORIES A THROUGH D	
ERCOT, ISO/RTO, NYSRC	Again, the existing standards should not be weakened.

MAAC/Kuras	Contingencies don't only happen when all lines are in service. Outages should be modeled during all types of contingency evaluation. This may be a fairly daunting task but this evaluation will help the system operators be prepared for the reality of operating the system in a less than ideal state. Possible ways to select lines to outage may be to look at lines with high unscheduled outage rates, lines close to sources of contamination, lines through areas that have historically had vegetation contact problems, and especially lines that when outaged can cause operating problems.
TVA	**{Half of group}.** Everyone in the group agreed that planned outages should be considered, but the group didn't agree on which categories to apply. About half believed they should be applied to all categories while the other half believed only A and B categories should have planned outages studied for the one year and beyond horizon.
WESTAR	The notion of including maintenance outages is to ensure that system restorations correctly evaluate single elements that would be removed in groups under a breaker-to-breaker outage analysis. The intent should not be to have any single element out for maintenance AND withstand the next contingency and should be stated as such.

Entities supporting Choice (2) – consider planned outages in SOME Categories only.

AEP, AESO, ALLEGHENY, CWLP, ENTERGY, IMO, ISONE, MAAC/Horakh, NPCC, R. Snow, SCGEM, SERC, SOUTHERNCO, SPP, TVA (half of group), WECC (WECC-1 plus WECC-2). (15 entities, 76 individuals)

ENTITIES SUPPORTING CHOICE (2) – CONSIDER PLANNED OUTAGES IN <u>SOME</u> CATEGORIES.	
AEP	**{B, C & D only}.** For Categories where planned maintenance is considered, it should only be necessary to test the most significant planned outages, not all possible planned outages.
AESO	**{A, B & C only}.** There is a need to clarify what constitutes the "normal" condition when a facility (transmission or generation) is on a long duration planned outage (is it a day, a week, etc). The A to C contingency categories can then be applied to the "normal" condition as defined. The testing requirement could perhaps be stated in a way that leaves it to the judgment of the Planning Authority as to the critical combinations of outages that need to be tested.
ALLEGHENY	**{A & B only}.** Allegheny Power feels that it is practical to consider planned outages in categories A and B.
CWLP	**{B and some C}.** No further comments.
ENTERGY	**{B & C only}.** It is not necessary to include planned maintenance outages in addition to Category A (no contingencies) because Category A plus planned outages equals Category B (single contingency). Therefore inclusion of maintenance outages in Category A is superfluous. The current standards do not require planned outages with Category A for that very reason. Maintenance outages should be considered for only Category B and C contingencies. Category D recognizes that cascading will occur in conjunction with the contingencies, so adding on more planned outages seems unnecessary,

	especially since Category D outages are very low probability events.
IMO, ISONE, NPCC	**{A, B & C only}.** We reiterate that the existing standards should not be weakened and request that the SAR be clarified to remove ambiguity regarding what is meant by "considering" a planned outage. Planned outages at present are considered however this is deemed an Operational Planning issue and is conducted so as to set Operational Limits for those conditions on a pre-contingency basis to allow for N-1 conditions. This particular SAR will ultimately result in a "planning" Reliability Standard. The wording, as it has been phrased, infers that the system must be planned, designed and built to N-2 standards (i.e. a line out for maintenance on top of a circuit element outage). Treatment of planned outages should be considered to some extent and the listed entities suggest the drafting team receive direction from the SAC regarding planned outages. The listed entities suggest that planned outages should be considered only in categories in A through C.
MAAC/Horakh	**{A & B only}.** Consider planned outages in Categories A & B only, since these categories are high probability and therefore could easily occur during a planned outage.
R.Snow	**{A, B & C only}.** Categories A through C should be considered. Category D does not require action so the analysis with outages does not add anything. Most planning software allows the sue of scripts to run multiple analysis without intervention. The state of modern computers is such that the added testing is not significant. Also, for most systems, this type of analysis is performed to define which load levels and generation dispatch would allow the maintenance (the problem in reverse).
SCGEM, SOUTHERNCO	**{A & B only}.** The requirement to consider planned outages in addition to each Category A and B contingency should remain part of this planning standard. We agree with the SAR drafting team that exhaustive testing for every contingency described and every load level in each category is not practical.
SERC	**{A & B only}.** The SERC PSS agrees that the requirement to consider planned outages in addition to each Category A and B contingency remain part of this planning standard. The SERC PSS could not reach consensus on the requirement to consider planned outages in addition to each Category C and D contingency. However, the SERC PSS does agree that exhaustive testing for every contingency described in each category is not required. The I.A compliance templates state that they must *"Be performed and evaluated only for those Category [B, C, and D] contingencies that would produce the more severe system results or impacts."*
SPP	**{B & C only}.** C.3. needs to be modified to address N-1-1 concerns. Category B (B1, B2, B3 or B4, including loss of an element without a fault) or in the alternative create Category B5 to Loss of an element without a fault. The latter is preferred. *[See similar comments - KCPL comment under Question 4 Choice (3) below, and Westar comment under Question 1(a) above]* Planned outages are typically not evaluated more than one year in advance and are not scheduled during peak load conditions. However, the existing Planning Standard 1.A is problematic in that it requires the system to be designed to accommodate planned outages during peak load conditions.
TVA	**{A & B only – half of group}.** Everyone in the group agreed that planned

	outages should be considered, but the group didn't agree on which categories to apply. About half believed they should be applied to all categories while the other half believed only A and B categories should have planned outages studied for the one year and beyond horizon.
WECC-1 & WECC-2	**{A, B & C (except C-3)}.** All contingencies where a single point of failure could cause facilities to be lost should be tested for compliance with the standards even under planned maintenance conditions. However, it should never be necessary to exhaustively test every possible combination of outages. Those contingencies that are clearly not critical outages should not have to be simulated.

Entities supporting Choice (3) – do NOT consider planned outages in addition to each contingency in any Category.

AES, AMEREN, ATC, BPA, DUKE, KCPL, MAPP, MEC (8 entities, 27 individuals)

ENTITIES SUPPORTING CHOICE (3) – DO NOT CONSIDER PLANNED OUTAGES IN ADDITION TO EACH CONTINGENCY IN ANY CATEGORY.	
AES	I would modify C-3 since it has the same effect as or similar to a C-3 event to include (line out followed by a category B event).
AMEREN	Is the issue planning the system or granting the outage? Local load may be exposed for granting a maintenance/construction outage, but the system should not be at risk. If the system is planned with category C requirements, in most cases it should meet category A and B requirements during a planned outage. To meet requirements of categories A and B during planned outage should be adequate. Planned outages for maintenance or construction are generally managed in the operating horizon, and are granted only during specific load levels (off-peak), generation patterns, and interchange patterns when the transmission system is not expected to be fully utilized. We agree that clarification should be provided on how this information should be used in an assessment. However, as the scope of planning assessments is for the planning horizon of one year or more (SAR-4, paragraph 2) and not the operating horizon, we do not believe that the requirement for planning for maintenance outages should be included in planning assessments.
ATC	Planning the system should consider the need for planned outages but should not require the capability to plan outages at peak system loads.
BPA	This requirement should be addressed in operational planning studies (less than one year). This standard is not appropriate for Transmission Planning studies except possibly as a tool to measure or compare the robustness or availability of transmission plans. This is not an item that should require any compliance action.
DUKE	The first priority should be to clarify the requirements of the I.A table. Utilities/ regions are interpreting the table differently. What was the original basis for the contingency categories and required response in the table? Clarify whether the original intent was to perform thermal, voltage and stability screens for all categories and the frequency at which the screenings were intended to performed. It is impractical to expect all screenings of all categories on a frequent basis. It may be appropriate to state that the table is for general guidance and that

	transmission owners may determine frequency at which studies should be performed based on load growth, system loading and significance of changes to the system.
KCPL	Planned outages are typically short-term (less than 1 year) and should be considered in the operating horizon. A planned outage is typically allowed during system load conditions when they will have minimal impact on the system. KCPL would prefer to clarify the existing Category B contingency that states "Loss of an element without a fault" be listed as the B5 contingency on the Table. Then, in Category C under Contingency 3, the revised wording should read "3. Category B (B1, B2, B3, B4, or B5) contingency, manual system adjustments, followed by another Category B (B1, B2, B3, B4, or B5) contingency. This will allow for the first contingency to include a planned outage (B5 without a fault) as well as a contingency with one of the fault conditions described in B1, B2, B3, and B4. *{See similar comments - Westar comment under Question 1(a) and SPP comment under Question 4, Choice (2).}*
MAPP & MECC	Planned Outages can be scheduled and analyzed in advance in the operating horizon (less than one year). Therefore, it should not be necessary to require that "systems must be capable of meeting Category C requirements while accommodating the planned outage of any bulk electric equipment..." Planned outages should be studied in advance by the requesting control area and be reviewed by the governing Reliability Coordinator to determine if overloads could occur. If studies show that overloads could occur, the planned outage should be deferred or operating guides prepared which would be used in the event a contingency does occur.
MEC	There is no need to plan or build facilities to meet Planning Standard 1.A when Planned Outages can be accommodated within the frame work of existing guidelines and procedures. Studies conducted for the operating horizon are not the subject of this standard.

MISCELLANEOUS COMMENT ON CONSIDERING PLANNED OUTAGES – (No Choice Selected)	
SEMINOLE	Many grid operations difficulties occur when a line is scheduled out for maintenance. If this SAR is going to address required N-2 planning assessments, then it must be clear and specific regarding the conditions when N-2 assessments are appropriate and the specific criteria for N-2 assessments.

QUESTION 5: ARE YOU AWARE OF ANY REGIONAL OR INTERCONNECTION DIFFERENCES IN REQUIREMENTS FOR ASSESSING AND PLANNING TRANSMISSION SYSTEMS IN NORTH AMERICA?

Question in its entirety:

5. Are you aware of any Regional or Interconnection differences in the requirements for assessing and planning transmission systems in North America? If so, please list and explain.

SUMMARY: 10 entities (68 individuals) responded to this question and gave examples of Regional/Interconnection differences.

Consideration by the SAR DT:

The SAR Drafting Team considered each comment individually, as shown in the table below.

Entities responding to Question 5 – are you aware of any Regional/Interconnection differences?

BPA, CWLP, KCPL, NYSRC, SCGEM, SEMINOLE, SOUTHERNCO, SPP, R, Snow, WECC (WECC-1 plus WECC-2), WESTAR. (10 entities, 68 individuals)

ENTITIES RESPONDING TO QUESTION (5) – ARE YOU AWARE OF ANY REGONAL/INTERCONNECTION DIFFERENCES?	
BPA	Although WECC has several requirements in its standards that are more stringent than the existing NERC criteria, it also has two standards that are less stringent (C2 and C9). Depending on the resolution of question #1 above, C2 and C9 may be a regional difference. WECC has a formal Probabilistic Planning process that allows adjustment of performance levels of contingencies in either direction. As this SAR states that the existing NERC Table I is the minimum criteria for probabilistic methods, this will be a regional difference for WECC. This is discussed more in our comments on the SAR document. **Consideration by the SAR DT** *The present SAR no longer states that existing Table I is the minimum criteria for probabilistic methods, only that Table I should be used as a starting point for a review of the existing standard. Thus, probabilistic planning could allow for adjustment of performance requirements in either direction.* *The SAR DT is recommending that the review of the existing standard include the likelihood, duration and impact of events, as well as the definition of applicable ratings (A/R). This review may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.* *Since there was no clear consensus on how to address re-classification of events, the SAR DT feels that a thorough review of existing Table I will assure that events are properly classified for the new Standard.* *If differences in the classification of events or performance requirements remain after the draft Standard is posted, please provide your specific*

	comments at that time
CWLP	WECC has asked the NERC PC for waivers for some of the Category C requirements. **Consideration by the SAR DT** *See the SAR DT response to WECC-1 & WECC-2 in this table.*
KCPL	KCPL is aware of neighboring regional council differences in classification of Category B and C contingencies between SPP and MAPP. **Consideration by the SAR DT** *The SAR DT is recommending a review of existing Table I, which may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.* *Since there was no clear consensus on how to address re-classification of events, the SAR DT feels that a thorough review of existing Table I will assure that events are properly classified for the new Standard.* *If differences in the classification of Category B and C contingencies remain after the draft Standard is posted, please provide your specific comments at that time.*
NYSRC	It is the NYSRC's position that (1) NERC specifies minimum standards, (2) a Region may establish more stringent standards for its members separate from the NERC standards, and (3) it is unnecessary to include these more stringent standards within the framework of the NERC standards. **Consideration by the SAR DT** *The SAR DT agrees with this position.*
SCGEM, SOUTHERNCO	Not aware of any at this time. However, Regional Differences could develop and each request for a Regional Difference should be considered individually. **Consideration by the SAR DT** *The SAR DT agrees with this position.*
SEMINOLE	In Florida, with the state requirements for the siting of facilities, the planning horizon should be adjusted from 5 YRS to 8 YRS. The 5 YR horizon is too short for some major transmission line projects and/or studies of transmission interconnections/upgrades for base load central station generating facilities. **Consideration by the SAR DT** *The present SAR provides for a planning horizon of 5 years <u>or more.</u>*
SPP	SPP is aware of differences between SPP and the neighboring regions of ERCOT, MAPP and WECC. **Consideration by the SAR DT** *If differences remain after the draft Standard is posted, please provide your specific comments at that time.*
R. Snow	Each region has their own requirements.

	Consideration by the SAR DT *Each Region has the right to request Regional differences for approval as part of the Standard.*
WECC-1 & WECC-2	The existing NERC Standard C-9 (and C-2 for bus sectionalizing breakers) as it applies to WECC should be modified so that thermal limit and voltage limit violations are allowed for bus sectionalizing breaker failures. This is because bus sectionalizing breaker failure is a relatively low probability event. Use of a bus sectionalizing breaker should be encouraged because it reduces the impact of a disturbance to a portion of the load only. Without the proposed modification there is no incentive to use the sectionalizing breaker. However, under no conditions should system instability or cascading outages be allowed for bus sectionalizing breaker failures. **Consideration by the SAR DT** *The SAR DT is recommending a review of existing Table I, including the likelihood, duration and impact of events, as well as the definition of applicable ratings (A/R). This review may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.* *Since there was no clear consensus on how to address re-classification of events, the SAR DT feels that a thorough review of existing Table I will assure that events are properly classified for the new Standard.* *If differences in the classification of events or performance requirements remain after the draft Standard is posted, please provide your specific comments at that time.*
WESTAR	Yes. MAPP categorizes some contingencies differently. **Consideration by the SAR DT** *The SAR DT is recommending a review of existing Table I, which may result in a re-classification of Table I events for the new Standard. The review may also result in other changes, such as addition or deletion of categories, events or performance requirements, use of probabilistic planning methods, or re-naming of categories based on event probability ranges.* *Since there was no clear consensus on how to address re-classification of events, the SAR DT feels that a thorough review of existing Table I will assure that events are properly classified for the new Standard.* *If differences in the categorization of events remain after the draft Standard is posted, please provide your specific comments at that time.*

QUESTION 6: DO YOU HAVE ANY OTHER COMMENTS ON THE SAR (V2)?

Question in its entirety:

6. Do you have any other comments on Version 2 of the SAR? Please list and explain.

SUMMARY: Most of the 28 entities (121 individuals) responded to this question and provided additional comments on the SAR (Version 2).

Consideration by the SAR DT:

The SAR Drafting Team considered each comment individually, as shown in the tables below.

The additional comments were divided into the following headings:

- *General – Is there a need for this SAR? How will this SAR fit in with the new Version 0 Standards? Will the existing standards be weakened?*
- *Scope of Standard*
- *Planning Horizon*
- *Use of Operating Procedures*
- *Transition Between Operating & Planning Standards*
- *Functions to Which the Standard Applies*
- *Applicable Portions of Existing Standards*
- *System Models*
- *Resource Planning*
- *Use of Generation or Load as Solutions*
- *Formatting of the SAR*
- *Demand Levels for Modeling*
- *Definition of Terms*
- *Variability of Load & Generation*
- *Probabilistic Planning Methods*
- *Planned Outages*
- *Applicable Ratings*
- *Short Circuit Current*
- *Other Areas that Should be Added or Clarified*

GENERAL COMMENTS ON THE SAR (VERSION 2)

ATC	The SAR drafting team seems to have its arms around the issues and seems ready to proceed to Standard development. **Consideration by the SAR DT** *The SAR DT agrees with this position and appreciates the vote of confidence.* On p. 3 of the SAR, Market Interface Principles, Question 5 stating that the Standard will not require public disclosure of commercially sensitive information: Depending on the level of public exposure of the load flow and stability models, generation cost data and stability parameter data may be deemed by some entities as confidential market information. **Consideration by the SAR DT** *This SAR does not establish the level of public exposure of data. The Standard Drafting Team will determine these requirements. Please submit your comments at the time of the draft Standard posting.*
IMO, ISONE, NPCC	The entities listed believe that the relationship between the concept of the Version 0 Standards and all the developing Version 1 Standards needs to be consistent. The reliability attributes of the Version 0 standards must be "carried through and into" the Version 1 Standards and there needs to be coordination to ensure this occurs. **Consideration by the SAR DT** *There will certainly be changes between V0 and the developing V1 Standards (V1 will be a revision of V0) but these changes must be approved by the industry, thus assuring carry-through and acceptance of reliability attributes.*
IMO, ISONE, NPCC, NYSRC	It is the opinion of NYSRC, ISONE, IMO, and the Northeast Power Coordinating Council's CP9 working group participating members that the existing NERC criteria should not be weakened, including the NERC Planning Standards listed in the SAR as the starting point to be used in drafting a new standard. Our comments support our position that the existing Planning Standards should not be weakened. **Consideration by the SAR DT** *The majority of industry comments have indicated that this SAR is needed to consider content changes in existing Standards. There will be changes between the Version 0 standards (existing standards with formatting changes) and the developing Version 1 standards (V1 will be a revision of V0), but these changes must be approved by the Industry.* *All parties will have an opportunity to participate in the Standard drafting process, including commenting on the draft Standard. Concerns that changes made may weaken the Standard should be brought up at that time.*
NYSRC	<u>With the advent of the Version 0 standards, we believe that there is no longer a need for this SAR.</u> The comments in the "Consideration of Industry Comments" paper indicate that comments received in 2002 on SAR Version 1 were in favor of a standard on transmission assessment and planning, which was the SAR DT's reason for preparing this SAR. However, the Version 0

	standards development process will now provide a transmission planning standard, without requiring the preparation of this new SAR. Despite this position, if the DT does get sufficient support to go forward with a new standard, NYSRC has additional comments, as shown below. **Consideration by the SAR DT** *Version 0 Standards are intended to re-format the existing Standards <u>without changing content</u>, using Functional Model terminology. The majority of industry comments have indicated that this SAR is indeed required to consider content changes in existing Standards.* The relationship with the Version 0 standards should be recognized in the SAR, including the mechanism of how this "Version 1" standard would replace Version 0. **Consideration by the SAR DT** *Version 0 Standards are intended to re-format existing Standards without changing content, using Functional Model terminology. The present SAR uses these existing approved Standards as a starting point to consider content changes for a new Planning Standard. There will be changes between V0 and the developing V1 standards (V1 will be a revision of V0), but these changes must be approved by the Industry.*
SPP	Implementation of this SAR needs to be coordinated with the activities of the Version 0 Standards Drafting Team. **Consideration by the SAR DT** *See our response to NYSRC above.*
WESTAR	How will this SAR integrate with Version 0 Standards? **Consideration by the SAR DT** *Version 0 Standards are intended to re-format the existing Standards without changing content, using Functional Model terminology. The present SAR uses these existing approved Standards as a starting point to consider content changes for a new Planning Standard.*

COMMENTS ON SCOPE OF STANDARD

AESO	The SAR drafting team should clarify through rules, tests, definitions, etc. the portion of an entity's transmission system that shall be planned under the full NERC Standard and what portion may be exempted. **Consideration by the SAR DT** *All NERC Standards apply to the bulk electric power system.* *The SAR DT felt that the definition of "bulk transmission" is an issue too large to be handled by one DT alone, and should be defined at a higher level. Accordingly, the SAR DT referred this issue to the NERC Director of Standards.*
IMO, ISO/RTO	This standard should make it abundantly clear that it applies to both internal and external systems, that is the system under study and adjacent systems, or the entire interconnection if appropriate. **Consideration by the SAR DT** *The SAR DT agrees with this position. If the commenter believes the Standard does not sufficiently address this issue, we encourage the commenter to provide specific language to address this concern when a draft Standard is posted.*
SEMINOLE	The SAR should require joint transmission planning - at a minimum, joint transmission planning should be required between transmission service providers and their network service customers. **Consideration by the SAR DT** *Based on industry feedback to the first posting (V1) of the SAR, this present SAR indicates the Standard will identify reliability performance requirements, but not specify how to achieve such requirements. Joint planning is one way to achieve the reliability requirements, and is neither precluded nor required by this SAR.*

COMMENTS ON THE PLANNING HORIZON

ALLEGHENY	This paragraph and the next **(the 2nd & 3rd paragraphs of posted SAR-Version 2)** are unclear and appear to be conflicting. This first paragraphs specifies that the "scope of such assessments and plans is for a planning horizon of one year or more". The next paragraph specifies, "Assessments should cover a planning horizon of at least 5 years". This appears to be a conflict. It may be that the term "planning horizon" is being used differently in these two paragraphs. It is unclear to us what is the intention of the first of these two paragraphs. **Consideration by the SAR DT** *As a result of your comment, the present SAR has been clarified to indicate that the planning period starts at one year and extends to 5 years or more.*
NYSRC	**From SAR Version 2:** "……..The planning horizon must be long enough to permit timely implementation of viable solutions to remedy the potential inadequacies found. Assessments should cover a planning horizon of at least 5 years. The horizon may be longer than 5 years, based on regulatory or legislative requirements, or on the judgment of the Transmission Planner or Planning Authority………" In paragraph above, 2nd sentence, insert "and plans" after "Assessments". The last sentence is not needed. A Region or other entity may have more stringent requirements than NERC – therefore, such a statement is not needed. **Consideration by the SAR DT** *The SAR DT agrees and accepts your first comment for inclusion in the revised SAR. The SAR DT decided to retain the last sentence in the referenced paragraph to clarify the requirement about the planning horizon.*
R. Snow	While some of the information about generation additions and load growth are considered reliable for five (5) years, a long-term study of approximately ten (10) years is necessary to identify global issues such as import limitations to a region that would require projects that have traditionally taken more than five (5) years. Suggest the following wording: *"Assessments shall cover a detailed planning horizon consistent with available information but no less than five (5) years. The five year horizon shall include load growth, new internal and external firm generation, generation retirements/failures, uncontrollable loop flows, reliance on external generation (identify both firm and market), topology changes, and firm transactions. A longer term study using a variety of scenarios that are expected to cover the most likely long term activity, shall be conducted to identify projects that take longer than five years to implement."* **Consideration by the SAR DT** *The SAR DT considered your alternative wording to be overly prescriptive. However, in the present SAR, the wording has been changed to clarify that the planning horizon extends to 5 years or more.*
SEMINOLE	In Florida, with the state requirements for the siting of facilities, the planning horizon should be adjusted from 5 YRS to 8 YRS. The 5 YR horizon is too short for some major transmission line projects and/or studies of transmission interconnections/upgrades for base load central station generating facilities. **Consideration by the SAR DT** *In the present SAR, the wording has been changed to clarify that the planning*

	horizon extends to 5 years <u>or more.</u>

COMMENTS ON USE OF OPERATING PROCEDURES

AMEREN	" …there is no intent to exclude appropriate operating procedures…". What is "appropriate"? Could generation redispatch be an appropriate operating procedure? If yes, what level of redispatch is appropriate? The standard should include a definition of "appropriateness" of operating procedures so that they are developed and applied on a uniform and consistent basis. **Consideration by the SAR DT** *The SAR DT believes it to be problematic to produce an exhaustive list of all appropriate operating procedures. Furthermore, industry feedback to the first posting (V1) of the SAR indicated a strong industry preference for the Standard <u>not</u> to specify how to achieve the reliability requirements. However, if you believe the draft Standard, when posted, does not sufficiently address this issue, please submit your comments at that time.*
MAPP	MAPP is concerned that the SAR does not limit manual or automatic readjustments for certain lower probability or low consequence events. MAPP urges that the SAR drafting team add additional provisions to require the drafting team to consider which manual and automatic readjustments are allowed and when in meeting the criteria that is included in the standards. **Consideration by the SAR DT** *See the SAR DT response to AMEREN, above.*
R. Snow	***<u>From SAR Version 2:</u>*** "……..While the planning horizon is intended to provide for facility additions, there is no intent to exclude appropriate operating procedures from the transmission plan……." Replace this sentence with "The planning horizon is intended to provide for facility additions. Operating procedures shall not be used as a substitute for good system design and shall only be applicable during maintenance outages and while facilities are being constructed." *[The original language would allow what was identified as the root cause of the Italian blackout. Namely, an operating procedure that had to be executed within 15 minutes. The operator had to call another area and ask them to perform an operating procedure. The procedure was underway but did not happen fast enough to avoid the next line trip. Operating procedures should never be a long term substitute for constructing facilities needed to assure reliability.]* **Consideration by the SAR DT** *Industry feedback to the first posting (V1) of the SAR indicated a strong industry preference for the Standard not to specify <u>how</u> to achieve the reliability requirements. Therefore, the SAR DT did not accept your suggestion. However, when the draft Standard is posted, feel free to submit your comments at that time.*

COMMENTS ON TRANSITION BETWEEN PLANNING & OPERATING STANDARDS

BPA	*Transition to Operating Standards:* The Planning Standards include multi-layered requirements for different types of outages, i.e., Level B single contingencies, Level C and D multiple contingencies. Compliance with these requirements is to be defined and monitored via the new Reliability Standards. However, once the system moves into the Operational timeframe (one year or less), Policy 2 presently requires meeting N-1 contingencies only with no requirements for Levels C and D. The transition between planning and operations needs further exploration. **Consideration by the SAR DT** *As a result of your comment and others, the present SAR has been revised to require that the new Standard consider the transition between operating and planning standards. In particular, the new Planning Standard will be coordinated with other standards, such as Standard 600, "Determine Facility Ratings, Operating Limits and Transfer Capabilities", which also applies to operations.*
MAPP & MEC	MAPP & MEC are concerned that the SAR does not provide for the coordination of the requirements of the planning standards in NERC Standard 500, "Assess Transmission Future Needs and Develop Transmission Plans", with the NERC Operating Standards provided in NERC Standard 600, "Determine Facility Ratings, Operating Limits, and Transfer Capabilities." The criteria that are proposed as a starting point for 500 in this SAR (events from Categories A through D) differ from the criteria that are included in the latest draft of NERC Standard 600 (Categories A and B). If these approaches are continued, then studies run for the operating horizon will differ significantly from studies run for the planning horizon. These differences in studies will carry over to the calculation of quantities used to offer transmission service, that is, Total Transfer Capacity and Available Transmission Capacity. If NERC does not coordinate these two standards, there will be a discontinuity in TTC and ATCs when the Planning Horizon begins and the Operating Horizon ends or from one day less than one year to one year. MAPP & MEC urge the SAR drafting team to consider this discontinuity and coordinate the SAR for 500 with the Standard that is being written for 600. If a discontinuity between criteria is allowed to continue in the SAR for Standard 500, the SAR drafting team should have a clear explanation for all market participants as to the reason for the discontinuity and how that should be dealt with by the elements of the NERC Functional Model. **Consideration by the SAR DT** *See the SAR DT's response to BPA above.*

COMMENTS ON FUNCTIONS TO WHICH THE STANDARD APPLIES

AMEREN	**From SAR Version 2:** "…….The Standard shall identify reliability requirements, but shall not specify how to achieve such requirements. These requirements shall apply to Transmission Planners and to Planning Authorities…….." Should the requirements be applied to Transmission Owners also? **Consideration by the SAR DT** *Yes. After reviewing your comment, we deleted the last sentence of the referenced paragraph, since page 2 of the SAR already lists TO as a function to which the Standard applies.*
R. Snow	The standards should apply to Transmission Owners, Transmission Operators, Transmission Planners, anyone who is connecting facilities to the transmission system, control areas, and reliability coordinators. ***Consideration by the SAR DT*** *After reviewing your comment, we deleted the last sentence of the referenced paragraph. On SAR page 2 is a list of functions to which the Standard applies. The functions listed are: RA, PA, TP, TO, LSE. This list is consistent with the Functional Model.*

COMMENTS ON APPLICABLE PORTIONS OF EXISTING STANDARD

NYSRC	***From SAR Version 2:*** "…………The applicable portions of the following existing NERC Planning Standards will be used as the starting point in drafting these requirements: • I.A Transmission Systems • I.B Reliability Assessment • I.D Voltage Support & Reactive Power • II.A System Data • II.D Actual and Forecast Demands…………………" Define "applicable portion". List the specific standards and measurements that are intended to be used as the starting point. ***Consideration by the SAR DT*** *The SAR DT believes this level of specificity is not needed in a SAR. If this concern is not addressed in the posted draft Standard, please feel free to submit your comments at that time.*
R. Snow	***From SAR Version 2:*** "…………The applicable portions of the following existing NERC Planning Standards will be used as the starting point in drafting these requirements: • I.A Transmission Systems • I.B Reliability Assessment • I.D Voltage Support & Reactive Power • II.A System Data • II.D Actual and Forecast Demands…………………" Add the following after the bullets. *"In addition to the above, the standard shall provide requirements on methodology of forecasting and normalizing load. This would include methods of determining the normalized load over a large geographic area with different weather patterns and norms. The "normalized" load should not be the load associated with the median weather over a summer or winter period but the load level that will provide sufficient reliability to supply all firm load obligations. Each region shall provide a definition as to what is sufficient reliability. The definition shall clearly define the risk that is being assumed in terms similar to the LOLE for lack of generation. In addition to the above two risk variables, a methodology shall be identified to quantify the risk of not being able to deliver the difference between the local load and generation. This is essentially the ability of the transmission system to respond to different generation dispatch patterns."* ***Consideration by the SAR DT*** *The SAR DT believes this level of specificity is not needed in a SAR. If these concerns are not addressed in the posted draft Standard, please feel free to submit your comments at that time.*
SCGEM	It would also be beneficial to the generation sector if the SDT for this new Planning Standard could summarize the differences between the existing Planning Standards I.A, I.B, I.D, II.A, and II.D and the new Planning Standard as it is being developed. This would gauge the potential impact to the plants. The main concerns have been 1) how to address regional differences (primarily related to Category C events), 2) how to differentiate Table I's application to the Planning world versus the Operations world, and 3) how to state the requirements more clearly. ***Consideration by the SAR DT*** *Since the revised Standard has not yet been drafted, the summary you*

	requested cannot be provided at this time. This summary comparison will be addressed in the Implementation Document that accompanies the new Standard.
SEMINOLE	The SAR should define specific planning voltage criteria for consistency between transmission owners/providers. Voltage Criteria should be specifically defined for normal condition and N-1 conditions and can be specified differently for: • Bulk power - non-load serving buses • Meshed/Looped - load serving buses • Radial - load serving buses ***Consideration by the SAR DT*** *The SAR DT believes this level of specificity is not needed in a SAR. If this concern is not addressed in the posted draft Standard, please feel free to submit your comments at that time.*

COMMENTS ON SYSTEM MODELS

AESO	We believe that the assumptions made for the amount, type and location of future supply are important considerations in assessing the future needs of transmission systems. The SAR drafting team should consider this forecast requirement in developing this Standard. Similarly, there is difficulty in separating planning for reliability and planning for overall system efficiency and economy, and the Standard must be clear on this differentiation. ***Consideration by the SAR DT*** *The SAR DT believes the present SAR addresses most of these concerns. With regard to your last concern, the SAR DT believes there is not always a clear differentiation between reliability, efficiency & economy considerations. However, NERC standards primarily focus on reliability and do not directly address efficiency & economy considerations. If you have specific suggestions after the draft Standard is posted, please comment at that time.*
AMEREN	We believe that for planning of robust transmission systems, the Standard should include (1) some incremental transfer capability requirement in addition to what is "projected" or modeled in the base case, (2) a combination of a line and a generator outage should be included in category B. ***Consideration by the SAR DT*** *With regard to (1) the SAR requires each Planning Authority and Transmission Planner to document the methodology for incorporating planned generation assets in the model. In response to your comment, the present SAR has been revised to specify that the methodology for incorporating planned generation assets <u>(including transfers)</u> must be documented. However, the SAR DT believes any specific incremental transfer capability requirement in the new Standard would be overly prescriptive.* *With regard to (2), the Standard Drafting Team will be reviewing the likelihood, duration and impact of events, as well as performance requirements of the existing Table I Categories. If this issue is still a concern when the draft Standard is posted, please submit your comments at that time.*
AMEREN	Why document and disclose methodologies limited to planned generation only? What about planned transmission and interchange? Is it because there is more uncertainty for speculative generation than transmission? What about differences in modeling details required for different type of analyses, such as thermal or voltage, regional or local? It is our experience that more detailed representation (lower voltage facilities) is required for voltage analysis than thermal analysis. Perhaps the standard should state that additional detail may need to be added to the model to adequately represent the system for specific studies. ***Consideration by the SAR DT*** *In response to your comment, the present SAR has been revised to require documentation of modeling assumptions, including generation modeling assumptions. The SAR DT highlighted generation assumptions because the SAR DT believes such assumptions are particularly important. Furthermore, given unbundling of generation resources from transmission in some areas, we believe there is considerable additional uncertainty in these assumptions,*

	both with regard to new generating units and dispatch of new and existing units.
ATC	New standard needs to consider the difficulties, particularly for stand-alone transmission companies, in obtaining resource information so models can balance load and resources. ***Consideration by the SAR DT*** *The present SAR does indicate that the Standard shall require that system models be developed, maintained and shared in a manner consistent with the Functional Model. The SAR also states that the Standard shall consider a requirement for LSEs to provide forecast resource data for input to the models. If the commenter has specific suggestions to further address this concern, please provide specific suggestions when the draft Standard is posted.*
KCPL	In regards to developing accurate regional models, all known firm transmission service, including rollover provisions for all firm transmission service, should be included in the base case models. ***Consideration by the SAR DT*** *The SAR DT believes this provision does not need to be in the SAR for the new Standard. Rollover provisions for firm transmission service is a FERC tariff issue that does not apply to entities outside of FERC's jurisdiction. Therefore, the SAR DT believes this provision would be overly prescriptive.*
MAPP	MAPP is concerned that there is no reference in the SAR to the need to handle firm contracts that may roll-over in the futures. Plans developed for the transmission system must recognize that the transmission system must have sufficient capacity to handle roll-overs. MAPP urges the SAR drafting team to include an appropriate description of the requirement for the plans with regard to roll-overs. ***Consideration by the SAR DT*** *The SAR DT believes this provision does not need to be in the SAR for the new Standard. Rollover provisions for firm transmission service is a FERC tariff issue that does not apply to entities outside of FERC's jurisdiction. Therefore, the SAR DT believes this provision would be overly prescriptive.*
R. Snow	**From SAR Version 2:** "………..The Standard shall require that system models be developed, maintained and shared in a manner consistent with the Functional Model. Included will be requirements that each Planning Authority and Transmission Planner document and disclose the methodology used for incorporating planned generation assets in the model, as well as how such generation is dispatched. While methodologies and assumptions must be documented, the Standard will not prescribe specific tools to be used in the performance assessment of the planned systems…………………" Replace the last sentence with *"while the standard will not prescribe specific tools, it shall identify methodologies to validate and procedures to operate the tools so that the identified outcomes from the analysis are not dependent on the tool or the way the tool was used or initialized."* ***Consideration by the SAR DT*** *Industry feedback to the first posting (V1) of the SAR indicated a strong industry preference for the Standard not to specify how to achieve the*

	reliability requirements. Therefore, the SAR DT did not accept your suggestion.
SCGEM, SOUTHERNCO	In relation to the methodology being used for incorporating planned generation assets in the model and how generation is dispatched: the type of each generating unit, the primary fuel type for each generating unit, and a dispatch order of the generating units should be required. In addition, a general description of the dispatch methodology used for the system should also be required. However, no cost information should be required. ***Consideration by the SAR DT*** *The SAR DT believes the referenced language addresses this concern by requiring system model sharing and documentation of generation modeling assumptions. The SAR DT agrees with the commenter that cost data should not be required because it would violate Market Interface Principle 5 (see SAR p. 3) which prohibits requiring the public disclosure of commercially-sensitive information.*
SEMINOLE	It is recommended that these models be "region-wide" system models that are developed utilizing a documented, consistent, region-wide criteria. ***Consideration by the SAR DT*** *The SAR DT believes this provision would be overly prescriptive.*

COMMENTS ON RESOURCE PLANNING

DUKE	Resource planning cannot be excluded from the standard. Guidance should be provided on incorporation of resource data from all LSE's and how resource deficiencies in outyear models should be handled (e.g. model fictitious generation with no reactive capability to ensure sufficient reactive resources are planned for if power is purchased from off system in the future). The increasingly frequent changes in resource designations are causing greater uncertainty in performance of planning for reliable system operation. ***Consideration by the SAR DT*** *The SAR DT agrees that generation resource modeling is an important data requirement for transmission assessment and planning. However, the SAR distinguishes resource information as an input to transmission planning studies from a requirement to assess and ensure the adequacy of generation resources (i.e., resource planning).* *The SAR DT believes it is an open issue as to what level of specificity the Standard should require for model building. If this issue is still a concern when the draft Standard is posted, please submit your comments at that time.* *Note: Whether to check the Resource Planning box on page. 2 of the SAR (as a function to which the Standard applies) has been deferred to the NERC Director of Standards.*
ENTERGY, SCGEM, SERC, SOUTHERNCO	Entities agree the Standard should not address resource planning. However, the Standard should include requirements for the LSEs to provide forecast resource data required to develop power flow models as required in the current II.D Standards. Accordingly, this new Standard should also apply to LSEs. (Thus, entities believe the "LSE" box on p.2 of SAR should be checked as an applicable function). ***Consideration by the SAR DT*** *The SAR DT believes commenters have raised a valid point. The SAR DT believes it is an open issue as to what level of specificity the Standard should require for model building. Therefore, the present SAR has been revised to indicate that the Standard shall consider a requirement for the Load Serving Entities to provide forecast resource data.* *Note: LSE box on page 2 of the SAR has also been checked.*
ENTERGY	In addition, the Standard should require the Transmission Planner to document and describe the methodology used to plan the transmission system around the generation dispatch assumptions used by the Transmission Planner to meet the LSE load when and if the LSE provided resources do not equal the LSE provided load. ***Consideration by the SAR DT*** *The SAR DT believes it is an open issue as to what level of specificity the Standard should require for model building. If this issue is still a concern when the draft Standard is posted, please submit your comments at that time.*
IMO, ISONE, NPCC	The entities listed recognize that Resource Planning is not covered in the proposed Standard because it is considered as being handled by market

	mechanisms that are/will be in place or perhaps addressed in a separate standard. Therefore, we assume that the generation and load information required to perform the planning studies are provided as described in section II.A of the existing Planning Standards. If not, sections II.B, II.E and III of the existing Planning Standards should also be used as the starting point in drafting of the reliability requirements. ***Consideration by the SAR DT*** *The SAR DT believes it is an open issue as to what level of specificity the Standard should require for model building. If this issue is still a concern when the draft Standard is posted, please submit your comments at that time.*
NYSRC	We agree that a transmission planning standard should not include Resource Planning requirements. However, the NYSRC strongly believes that NERC should develop a separate Resource Planning Standard. ***Consideration by the SAR DT*** *The Resource and Transmission Adequacy Task Force (RTATF) proposed and NERC accepted that a Resource Adequacy SAR should be developed.*
WECC-2	In order to develop any meaningful standard, the resource part of the power system should be addressed by including standards for the modeling of existing resources, planned retirement of resources, and planned resources in the next 5 to 10 years time frame. This information will be necessary in order to assess whether future systems can or can not meet the reliability standards. ***Consideration by the SAR DT*** *The SAR DT believes the present SAR as written addresses this concern. Specifically, the SAR requires the documentation and sharing of system models, including the methodology of incorporating planned generation assets in the model as well as how such generation is dispatched.*

COMMENT ON USE OF GENERATION OR LOAD AS SOLUTIONS

AMEREN	If generation is considered in lieu of transmission reinforcement, the system must be able to withstand the loss of that generation plus another single contingency. The reason for this is that generation can be on or off due to economic and other factors after its installation, while transmission is almost always "on". ***Consideration by the SAR DT*** *The SAR DT agrees with this position. The loss of a generating unit plus another single contingency is already an event against which transmission systems must be tested in the existing Standards, and the present SAR provides for the new Standard to use the existing Standards as a starting point. If this issue is still a concern when the draft Standard is posted, please submit your comments at that time.*

COMMENT ON SAR FORMATTING

ALLEGHENY	***From SAR Version 2:*** "…………While the Standard should start from and closely align with the existing Planning Standards I.A, .B, .D, II.A,.D, the system conditions to be studied or assessed may need to be better defined or clarified. For example, the Standard should clarify that the requirement to assess the performance at **all** demand levels does not mean that a multitude of transmission models need to be created for every possible demand level, only that a representative sample covering critical operating conditions needs to be modeled in accordance with regionally-defined criteria…………." This paragraph starting "While the Standard should start from…" has a problem with it's second sentence. The sentence "For example…" does not really apply to the first sentence. We recommend that this paragraph be changed as follows: *"While the Standard should start from and closely align with the existing Planning Standards I.A, .B, .D, II.A,.D, the system conditions to be studied or assessed may need to be better defined or clarified.* *Examples of areas that should be considered for clarification in the Standard include:* *The Standard should clarify that the requirement to assess the performance at ALL demand levels does not mean that a multitude of transmission models need to be created for every possible demand level, only that a representative sample covering critical operating conditions needs to be modeled in accordance with regionally-defined criteria.* *The Standard should provide a clearer definition of "cascading outages".** *And so on".* ***Consideration by the SAR DT*** *In response to your comment, we have revised the SAR to reflect the new formatting.*

COMMENT ON DEMAND LEVELS FOR MODELING

SEMINOLE	***From SAR Version 2:*** "…………For example, the Standard should clarify that the requirement to assess the performance at **all** demand levels does not mean that a multitude of transmission models need to be created for every possible demand level, only that a representative sample covering critical operating conditions needs to be modeled in accordance with regionally-defined criteria…………." Regarding " … a representative sample covering critical operating conditions …" It is recommended that this standard include specific requirements; such as, at what load levels and how many different load levels is intended by this part of the SAR. A suggestion would be 100% and 80%, and perhaps the 60% load level. ***Consideration by the SAR DT*** *The SAR DT considered your suggestions for specific load levels to be overly prescriptive.*

COMMENTS ON DEFINITION OF TERMS

AMEREN	In addition to the definition of "cascading outages" , clarification is needed for identification of a cascading state. For example, we are not sure that assumption of some percent overload, say 125% of emergency rating, is a good proxy for cascading. ***Consideration by the SAR DT*** *The SAR DT agrees that a clearer definition of cascading outages (including what constitutes a cascading state) must be provided in the new Standard, and be fully coordinated with the definition in other new Standards. The present SAR has been revised accordingly.*
ERCOT, IMO, ISONE, ISO/RTO, NPCC	All entities listed suggest that the definition for Cascading Outage be fully coordinated with the STDs 200 and 600. ***Consideration by the SAR DT*** *The SAR DT agrees with this position. The SAR DT believes a clearer definition of cascading outages must be provided in the new Standard, and be fully coordinated with the definition in other new Standards. The SAR has been revised accordingly.*
IMO, ISONE, NPCC	NPCC has submitted a suggested definition of "cascading outage" in the comments for the last posting of STD 200, which is endorsed by the other entities listed: *Cascading Outage- "The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area's) boundaries.""* ***Consideration by the SAR DT*** *The SAR DT agrees that a clearer definition of cascading outages must be provided in the new Standard, and be fully coordinated with the definition in other new Standards. Your specific suggestion is inconsistent with the definition in the latest version of STD 600. Please provide additional comments and suggestions when the draft Standard is posted.*
IMO, ISONE, NPCC	NPCC would also like to submit a proposed definition of Bulk Power System, as follows, and would like it to be considered as a "building block" for the NERC BES (Bulk Electric System) definition. The definition is endorsed by the other listed entities: *Bulk Power System-BPS-(or BES in NERC documents) — "The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have a significant adverse impact outside of the local area. In this context, local areas are determined by the Council members."* ***Consideration by the SAR DT*** *The SAR DT feels that the definition of "bulk transmission" is an issue too large to be handled by one Drafting Team alone, and should be defined at a higher level. Accordingly, the SAR DT referred this issue to the NERC Director of Standards.*
NYSRC	***From SAR Version 2:*** "……….The Standard should provide a clearer definition of "cascading

	outages"……………". Replace "provide" with "consider". ***Consideration by the SAR DT*** *The SAR DT retained the word "provide", since we believe a clearer definition of cascading outages must be provided in the new Standard, and be fully coordinated with the definition used in other developing Standards.* *The present SAR has been revised to require that definitions be coordinated and consistent with other Standards being drafted by NERC.*
SERC	The SERC PSS agrees that the Standard should provide a clearer definition of "cascading outages." In addition the SERC PSS recommends that the Standard provide a clearer definition of what is meant by "system stable." ***Consideration by the SAR DT*** *The SAR DT agrees, and the SAR has been revised to recommend that the new Standard provide a clearer definition of "system stable".*
SCGEM, SOUTHERNCO	In general, the NERC Standards need to have a common definition across the board for any definition used in a Standard. For example, the definition for "Cascading Outages" needs to be coordinated with the Standards Drafting Team (SDT) for the "Determine Facility Ratings, Operating Limits, and Transfer Capability" standard (STD 600). ***Consideration by the SAR DT*** *The SAR DT agrees with this position. The SAR DT believes a clearer definition of cascading outages must be provided in the new Standard, and be fully coordinated with the definition in other new Standards. The SAR has been revised accordingly.*
SCGEM, SOUTHERNCO	Southern agrees that the Standard should provide a clearer definition of "cascading outages." We suggest that the following be considered: *Cascading — "The uncontrolled successive loss of system elements triggered by contingencies which results in widespread electric service interruption 1) that drops 1000 MW of load or more or 2) that crosses control area boundaries."* In addition, Southern recommends that the Standard provide a clearer definition of what is meant by "system stable." We suggest that the following be considered: *System stable — "For Category A and B simulations, system stable means that no generating units pull out of synchronism. For Category C events, system stable means that if units pull out of synchronism, 1) the resulting impedance swings are not out into the transmission system and 2) the total amount of generation lost because of out-of-step tripping does not exceed the control area operating reserve level."* ***Consideration by the SAR DT*** *The SAR DT will pass these suggested definitions along to the Standard Drafting Team for consideration.*

COMMENTS ON VARIABILITY OF GENERATION & LOAD

IMO, ISO/RTO	Seasonal and weather related variability should be considered in studies. ***Consideration by the SAR DT*** *The SAR DT agrees with this position. We believe the present SAR as written takes into account seasonal and weather-related variations.*
MAPP	MAPP is concerned that there is no provision for recognizing the variability of generation in the SAR. MAPP asks the SAR drafting team to add another bullet to the SAR which states, "The Standard should take into account the variability of generation due to factors such as weather and time of day." ***Consideration by the SAR DT*** *The SAR DT agrees with this position. We have not added a bullet to the SAR, but rather have revised the existing bullet to take your suggestion into account.*

COMMENTS ON PROBABILISTIC PLANNING METHODS

AESO	The basis of probabilistic planning, in our view, is to make planning decisions based on the metrics, such frequency, duration and impact, derived from probabilistic assessments. This is usually difficult to do in planning the bulk portion of the transmission system, since outage events are rare but their impact is significant (like multiplying infinity and zero). The categorization of contingencies in Table 1 using outage frequency as a determinant is a step in applying probabilistic techniques in this Standard but it is not probabilistic planning in its true sense. The SAR development team should clarify what it intends with regard to “the use of probabilistic planning methods”. ***Consideration by the SAR DT*** *In response to your comment, the SAR DT has revised the present SAR to clarify our intent with regard to probabilistic planning methods.*
AMEREN	**From SAR Version 2:** “…………….The Standard should allow for the development and use of probabilistic planning methods. The minimum requirements of probabilistic methods are the contingencies as described in Table 1 of existing Planning Standard I.A.. There should be NERC approval of acceptable levels of risk………………….” The second sentence about “The minimum requirements of probabilistic methods …. Does this mean that probability should be assigned to at least all of the contingencies included in Table I.A.? AMEREN believes that defining acceptable levels of risk will be a major undertaking. Isn’t the level of risk dependent upon the entity and/or perception? Using a deterministic methodology in the planning horizon for single contingency provides a margin to handle many multiple unplanned facility outages or unforeseen system conditions in the operating horizon. ***Consideration by the SAR DT*** *The SAR DT is recommending the continued use of deterministic criteria in the Standard, but is also recommending probabilistic planning methods as an alternative or augmentation to the deterministic criteria. The SAR DT believes probabilistic planning methods are another way of defining acceptable levels of risk. For example, the existing deterministic criteria considers all line outages to be the same level of risk, but a probabilistic method may differentiate transmission line outages by length of line. The SAR DT has revised the present SAR to clarify this point in response to your comment.*
ATC	**From SAR Version 2:** “…………….The Standard should allow for the development and use of probabilistic planning methods. The minimum requirements of probabilistic methods are the contingencies as described in Table 1 of existing Planning Standard I.A.. There should be NERC approval of acceptable levels of risk………………….” This may also go back to question 1 in the Comment Form, but the statement, “There should be NERC approval of acceptable levels of risk” needs to be better defined. For example does this mean that a utility can’t decide to increase the operating temperature of a line conductor without NERC approval? ***Consideration by the SAR DT*** *The SAR DT agrees that the sentence concerning NERC approval was unclear. The SAR DT has removed the referenced sentence and added*

	wording to clarify our intent regarding the "use of probabilistic planning methods".
BPA	The handling of probabilistic criteria in the SAR seems quite convoluted, i.e. it can only be used to *increase* performance levels AND has to be approved by NERC. This is not the way probabilistic planning should work. WECC presently has a process (Seven Step Reliability Performance Evaluation) to allow changes in performance requirements (both up and down) for specific outages based on rigorous analysis and monitoring actual performance. It is mostly applicable to requirements beyond the NERC criteria (such as outages of adjacent circuits on separate towers). Use of these methods should be allowed with approval of affected regions. This process should allow for movement below Table 1, i.e. moving Category C outage to Category D. One way to resolve this would be to replace the word "minimum" in the SAR to "starting". ***Consideration by the SAR DT*** *In response to your comment, the SAR DT has added wording to clarify our intent regarding the "use of probabilistic planning methods". Specifically, there is no longer reference to "minimum criteria", but rather a recommendation that the existing Standards be used as a "starting point", allowing movement above or below existing Table I. The reference to NERC approval has also been removed.*
NYSRC	Is the probabilistic method referred to here considered a replacement for the NERC Criteria or a supplement to NERC Criteria? NERC should not allow such a method as a substitute for NERC criteria. I am not aware that NERC has completed an analysis to evaluate and compare the level of reliability of probabilistic criteria with NERC criteria. Such an evaluation would be needed. ***Consideration by the SAR DT*** *The SAR DT is recommending the continued use of deterministic criteria in the Standard, but is also recommending probabilistic planning methods as an alternative or augmentation to the deterministic criteria. The SAR DT has revised the present SAR to clarify this point in response to your comment.*
R. Snow	**From SAR Version 2:** "……………..The Standard should allow for the development and use of probabilistic planning methods. The minimum requirements of probabilistic methods are the contingencies as described in Table 1 of existing Planning Standard I.A.. There should be NERC approval of acceptable levels of risk…………………." Add a sentence after the first sentence *"The probabilistic methodology shall not ignore specific cases that would result in significant load dump or cascading outages. Each region shall identify how to resolve such outages." The last sentence "Acceptable levels of risk in terms of maximum consequential and programmatic load dump and maximum durations for the outages shall be defined."* ***Consideration by the SAR DT*** *The SAR DT believes this level of specificity is not needed in a SAR. However, the SAR DT appreciates your comment, and has revised the present SAR to clarify the potential application of probabilistic planning methods. If this issue is still a concern when the Standard is posted, feel free to submit your comments at that time.*

WECC-1	It appears to us that as written, the standard that flows from this SAR can only allow the probabilistic planning methods to make the standard more, not less, stringent than the existing Standard IA. This is not the way probabilistic planning methods should work. This statement also does not make sense when you read the next sentence, "There should be NERC approval of acceptable levels of risk." If the standard can only be more stringent, then there is no need for NERC to approve the level of risk, or even the probability of occurrence of the contingency. One way to resolve this issue would be to change the word "minimum" to "starting". ***Consideration by the SAR DT*** *In response to your comment, the SAR DT has added wording to clarify our intent regarding the "use of probabilistic planning methods". Specifically, there is no longer reference to "minimum criteria", but rather a recommendation that the existing Standards be used as a "starting point", allowing movement above or below existing Table I. The reference to NERC approval has also been removed.*
WECC-2	The Standard should also allow for the use of Probabilistic Criteria. In WECC, Probabilistic Planning refers to the application of fixed planning standards to a given problem to determine the probable or expected load not served. Probabilistic Criteria is used to refer to adjusting the performance category based on the probability of the event for a specific facility. The performance category can move up or down depending on actual or planned performance. Therefore, Table 1 would be the starting point for making probabilistic criteria adjustments. Probabilistic adjusted criteria would be the basis for Probabilistic Planning. ***Consideration by the SAR DT*** *See the SAR DT's response to WECC-1 and BPA above.*
WECC-1 & WECC-2	The NERC Planning Standards should follow what WECC is doing with regard to listing disturbances as a guide, but say that other disturbances with the same probability should be included. List the probability ranges (outages per year), Category B: >= 0.33, Category C: 0.33 to 0.033; Category D1 (no cascading): 0.033 to .0033, Category D2: < .0033. The standard should allow for changes in the required performance for given disturbances if a probability in another range has been established for a given disturbance. NERC should require that the Regional Councils specify voltage dip and minimum frequency standards similar to WECC (i.e., the voltage dip and minimum frequency should be within Applicable Ratings). We are not proposing that NERC set fixed values for these standards that would be the same throughout the ten NERC Regions. NERC should not set the standards. WECC recommends that the approval of acceptable levels of risk be at the regional level. ***Consideration by the SAR DT*** *In response to your comment, the SAR DT has added wording to clarify our intent regarding the "use of probabilistic planning methods".*

	The SAR DT believes the existing Standard allows Regions to apply voltage dip and voltage stability Regional requirements under the "voltage limits" section of Table I. The SAR DT believes that frequency standards are outside the scope of Transmission Planning for most Regions, and has not included frequency standards in the NERC SAR. This does not preclude Regions where frequency standards have transmission adequacy implications from developing their own standards.

COMMENTS ON PLANNED OUTAGES

AMEREN	We do not believe that the requirement for planning for maintenance outages should be included in planning assessments. See AMEREN's response/comments to Question 4 in this document. ***Consideration by the SAR DT*** *In reviewing industry responses, there was no clear consensus on the issue of including planned outages in planning assessments. See the SAR DT's response to MAPP below. We believe the revised wording in the present SAR adequately addresses these concerns.*
MAPP	MAPP urges the SAR drafting team to add words under this bullet to more clearly explain the SAR drafting team's position with regard to prior planned outages. ***Consideration by the SAR DT*** *The SAR DT believes there is confusion surrounding the planned outage requirement in the existing standard. The SAR DT is recommending that the new Standard specify whether to retain this requirement for Categories B and C. If retained, the Standard should clarify the requirement in such a way that the requirement can be practically implemented.* *In particular, the SAR DT has revised the present SAR to clarify that transmission entities are not required to exhaustively test their systems for every conceivable planned (including maintenance) outage in addition to every conceivable Category B and C contingency. The SAR DT has also revised the SAR to delete the planned outage requirement for Categories A and D.*
MEC	MEC urges the SAR drafting team to add the following words to this bullet to more clearly explain the SAR drafting team's position with regard to planned outages: *"In particular, it is incorrect to have a requirement to exhaustively test for every contingency described in each category plus every conceivable planned outage.* *Planned Outages can be scheduled and analyzed in advance in the operating horizon (less than one year). Therefore, it should not be necessary to require that "systems must be capable of meeting Category C requirements while accommodating the planned outage of any bulk electric equipment..." Planned outages should be studied in advance by the requesting control area and be reviewed by the governing Reliability Coordinator to determine if overloads could occur. If studies show that overloads could occur, the planned outage should be deferred or operating guides prepared which would be used in the event a contingency does occur.* *There is no need to plan or build facilities to meet Planning Standard 1.A when Planned Outages can be accommodated within the frame work of existing guidelines and procedures. Studies conducted for the operating horizon are not the subject of this standard.* *Therefore, the SAR drafting team directs the standard drafting team to delete the requirement for the prior planned outage from the standard given that known planned outages must be included in studies that are conducted during the operating horizon which are not the subject of this standard but which are required in accordance with NERC Standard 200, "Operate Within Interconnection Reliability Operating Limits Standard" and NERC Standard 600, "Determine Facility Ratings, Operating Limits, and Transfer Capabilities".*

	Note: The above suggested wording is similar to the MAPP/MEC comment for Question 4, and the SAR DT is offering a similar consideration: ***Consideration by the SAR DT*** *See the SAR DT's response to MAPP above. We believe the revised wording in the present SAR adequately addresses these concerns.*
SEMINOLE	Many grid operations difficulties occur when a line is scheduled out for maintenance. If this SAR is going to address required N-2 planning assessments, then it must be clear and specific regarding the conditions when N-2 assessments are appropriate and the specific criteria for N-2 assessments. ***Consideration by the SAR DT*** *See the SAR DT's response to MAPP above. We believe the revised wording in the present SAR adequately addresses these concerns*

COMMENTS ON APPLICABLE RATINGS

ALLEGHENY	**From SAR- Version 2:** "……….Performance requirements for Category C events shall be re-evaluated. For example, for certain Category C events, such as #2, #3 and #9 events, consider removing references to "Applicable Ratings" to clarify that the performance requirement is "No Cascading Outages are Allowed"…………………". This bullet does not appear necessary. "No Cascading Outages" is already part of Table I for these events. Removing "Applicable Ratings" would not add to the clarity. ***Consideration by the SAR DT*** *The wording in the present SAR was revised to remove the referenced language.* *The SAR DT is recommending that the Standard DT conduct a review to determine whether the events in existing Table I are classified correctly. In conducting its review of the likelihood of events and acceptable performance requirements, the Standard DT should clarify ambiguities in performance requirements, specifically cascading outages and Applicable Ratings (A/R).* *For example, the Standard should clarify tests used for considering cascading, such as divergent power flow, overload limits post contingency, voltage magnitudes, etc. The Standard should also clarify that different ratings may be applicable to different categories of events and perhaps to different types of events with a category (specified by entities in accordance with STD 600).*
AMEREN	We agree that some of the contingency categories should be reviewed. See AMEREN's comment for Question 1 (c) in this document – approach (1): keep same categories but re-classify certain events as Category D. ***Consideration by the SAR DT*** *See the SAR DT's global consideration of your Question 1(c) comment.*
BPA	Applicable Ratings: There is a need to tighten up the methodology for Applicable Ratings to ensure that compliance with this standard is measurable. We assume that this will take place in the Determine Facility Ratings Standard although we are concerned about how this is progressing. ***Consideration by the SAR DT*** *The SAR DT is recommending that Applicable Ratings (A/R) be clarified by the Standard DT and the Standard DT will evaluate your comment at that time.*
IMO, ISONE, NPCC	We are not in favor of removing references to "Applicable Ratings". Despite the fact that the performance requirement would be "No Cascading Outages are Allowed", the "Applicable Ratings" should always be respected. ***Consideration by the SAR DT*** *The SAR DT is recommending that Applicable Ratings (A/R) be clarified by the Standard DT and the Standard DT will evaluate your comment at that time.*

MAPP	MAPP urges the SAR drafting team to clarify the meaning of the term "Applicable Ratings" and determine if it is possible to have different A/Rs for different categories. ***Consideration by the SAR DT*** *The SAR DT is recommending that Applicable Ratings (A/R) be clarified by the Standard DT and the Standard DT will evaluate your comment at that time.*
MEC	**From SAR- Version 2:** "……….Performance requirements for Category C events shall be re-evaluated. For example, for certain Category C events, such as #2, #3 and #9 events, consider removing references to "Applicable Ratings" to clarify that the performance requirement is "No Cascading Outages are Allowed"…………………". MEC urges the SAR drafting team to add Category C#1, #6, #7 and #8 events to the bullet above, to clarify the performance requirement for certain Category C events. ***Consideration by the SAR DT*** *The wording concerning A/R has been revised in the present SAR.* *There was no clear consensus from industry that the events in Categories B, C and D in Table I should be or should not be re-classified. The SAR DT is recommending that the Standard DT conduct a review to evaluate whether the events are classified correctly.* *All parties will have an opportunity to participate in the Standard drafting process, including commenting on the draft Standard. Specific concerns should be brought up at that time*.
MEC	MEC urges the SAR drafting team to direct the Standard Drafting Team to remove references to "Applicable Ratings" from all events listed (see MEC comment above), since information is readily available which demonstrates that the listed events are much less likely than other Category C events. ***Consideration by the SAR DT*** *The SAR DT is recommending that Applicable Ratings (A/R) be clarified by the Standard DT and the Standard DT will evaluate your comment at that time.*
MEC	MEC urges the SAR drafting team to include the following statement in the SAR: "The Standard should clarify how breaker failure events (Category C2, C6, C7, C8, and C9 events) are to be considered given that operating a breaker with disconnects open or eliminating a breaker are technically acceptable mitigation schemes for such events. Such mitigation schemes actually result in less reliable system designs and system operating configurations. Thus including Applicable Ratings in the Standard for these lower probability breaker failure events can send the wrong reliability signals to NERC members." This statement reflects another reason why breaker failure events should be reclassified such that Applicable Ratings is no longer considered a requirement for these low probability events. ***Consideration by the SAR DT*** *See the SAR DT's consideration of MEC's first comment above.*

MEC	MEC urges the SAR drafting team to consider NOT reclassifying any of the Category C events to Category D but instead deleting the Applicable Rating requirements from the lower probability Category C events. MEC believes that the performance requirements for lower probability Category C events should be to protect for cascading, instability, and uncontrolled separation. It is MEC's belief that this was the intent of the drafting team that originally developed the existing NERC Planning Standards. ***Consideration by the SAR DT*** *See the SAR DT's consideration of MEC's first comment above.*
NYSRC	**From SAR- Version 2:** "……….Performance requirements for Category C events shall be re-evaluated. For example, for certain Category C events, such as #2, #3 and #9 events, consider removing references to "Applicable Ratings" to clarify that the performance requirement is "No Cascading Outages are Allowed"………………….". The above bullet should be removed. This would be a weakening of the criteria. ***Consideration by the SAR DT*** *There was no clear consensus from industry that the events in Categories B, C and D in Table I should be or should not be re-classified. The SAR DT is recommending that the Standard DT conduct a review to evaluate whether the events are classified correctly.* *All parties will have an opportunity to participate in the Standard drafting process, including commenting on the draft Standard. Concerns that changes made may weaken the Standard should be brought up at that time.*
R. Snow	Clarify that the "applicable ratings" for multiple events should be consistent with supplying firm load and firm transactions until the outages are repaired or switching mitigates the overloads. For example, one applicable rating would be the short time rating of equipment that was stressed when a transformer failed. However, there must be a method of supplying the load pocket for the duration to repair/replace the transformer that does not involve long term rotating blackouts. Just achieving "no cascading outages" is not sufficient. ***Consideration by the SAR DT*** *The SAR DT is recommending that Applicable Ratings (A/R) be clarified by the Standard DT and the Standard DT will evaluate your comment at that time.*

COMMENT ON SHORT CIRCUIT CURRENT

AMEREN	We assume that short circuit current refers to fault duty or interrupting current. ***Consideration by the SAR DT*** *Fault duty and interrupting current refer to the ratings of transmission facilities. The short circuit current is compared to these ratings.*

COMMENTS ON OTHER AREAS THAT SHOULD BE ADDED OR CLARIFIED

AESO	There should be a clear distinction between the appropriate use and application of RAS (or SPS) and "safety nets". ***Consideration by the SAR DT*** *Based on industry comments on the first posting (V1) of the SAR, there was a strong preference not to specify how to achieve reliability performance requirements. Therefore, the SAR does not specifically address these issues/distinctions.*
AMEREN	The "projected level of transfers" defined in the Standard – what does this include? Should it include/consider all transmission reservations including roll-over-rights? ***Consideration by the SAR DT*** *The present SAR has been revised to specify that system models must be developed and shared, including documenting the methodology for incorporating planned generation assets (including transfers) in the model. The projected levels of transfers are determined by each Transmission Planner, and these may include rollover provisions as appropriate.* *Note: See KCPL & MAPP comments under the "System Models" table in this document, and the SAR DT's consideration of those comments.*
MAPP	MAPP asks that the SAR drafting team add a bullet to the SAR that requires that the Standard drafting team consider the development of reactive power margin and transfer power margin standards which expand beyond existing NERC Standard I.D. ***Consideration by the SAR DT*** *The NERC Planning Committee is reviewing Regional reactive power and voltage control practices. Their findings may need to be incorporated into the new Planning Standard (STD 500) when this review is completed. Standard 600 addresses system operating limits and transfer capability. Whereas this SAR DT did not attempt to duplicate these efforts, the present SAR does not preclude the Standard Drafting Team from further refining reactive power margins and/or power transfer margins.* *In the present SAR, a bullet has been added that the Standard address requirements on reactive planning, with specific reference to steady state and transient voltage stability criteria.*
MAPP	MAPP notes that Standard 600, "Determine Facility Ratings, Operating Limits, and Transfer Capabilities" has been drafted to do away with the references to Categories A through D. The criteria are just listed in the standard. MAPP asks that the SAR drafting team require that the standard drafting team for Standard 500 also eliminate the category references to be consistent with the Standard 600 approach. ***Consideration by the SAR DT*** *This SAR 500 DT does not believe that Standard 500 necessarily has to have*

	the same format as Standard 600. However, we have revised the present Standard 500 SAR to provide for coordination between the two Standards.
MAPP & MEC	In general, MAPP and MEC support the six bullets that the SAR drafting team has provided on page SAR-5 (of SAR-Version 2) with the amendments and additions described above in our comments. These bullets add needed details to the SAR. ***Consideration by the SAR DT*** *The present SAR has been revised to reflect appropriate details.*
R. Snow	New section: The subject of assuring that generation is deliverable to the load should be added. This should not be vague but should be defined by a specific set of tests and the expected range of results. In doing these tests, reliance on capacity assigned to other regions should be limited to amounts identified and accepted by adjacent regions. For example, if a region is assuming it will have net purchases from adjacent regions, the other regions must show a net sale. ***Consideration by the SAR DT*** *The NERC Planning Committee is tackling this deliverability issue, as identified by the Resource and Transmission Adequacy Task Force (RTATF). This new Transmission Planning Standard (STD 500) may need to be revised in the future to reflect integration with Resource Adequacy Standards.*

INDUSTRY COMMENTER KEY

TOTAL ENTITIES COMMENTING; ***28***

TOTAL INDIVIDUALS COMMENTING ***121***

AEP: AEP Service Corp, Raj Rana

AES: Allegheny Energy Supply (Generator), Ken Githens

AESO: Alberta Electric System Operator (ISO), Neil Brausen, group chair. Includes:

Neil Brausen, Jeff Billinton, Bob Chow

ALLEGHENY: Allegheny Power (Transmission Owner), William J. Smith

AMEREN: Ameren (Transmission Owner), Kirit Shah

ATC: American Transmission Company (Transmission Owner), Peter Burke (on behalf of ATC's David Smith).

BPA: Bonneville Power Administration (Transmission Owner), Marv Landauer, group chair. Includes:

Paul Arnold, Rebecca Berdahl, Mark Bond, Gordon Comegys, Angela DeClerk, Don Gold, Kyle Kohne, Mike Kreipe, Chuck Matthews, Bill Mittlestadt, James Murphy, Melvin Rodrigues, Mike Viles, Paul Ferron

CWLP: City Water, Light & Power (Illinois- Generator), Karl Kohlrus

DUKE: Duke Energy (Transmission Owner), Thomas Pruitt, Robert W. Pierce

ENTERGY: Entergy Services, Inc (Transmission Owner), Ed Davis

ERCOT: Electric Reliability Council of Texas, Bill Bojorquez

IMO: Independent Electricity Market Operator; Khaqan Khan

ISONE: ISO New England, Kathleen Goodman

ISO/RTO: ISO/RTO Council Standards Review Committee, Karl Tammar (NYISO), group chair. Includes:

AESO, Dale McMaster
CAISO, Ed Riley
ERCOT, Sam Jones
IMO, Don Tench
ISO-NE, Peter Brandien
MISO, Bill Phillips
NYISO, Karl Tammar
PJM, Bruce Balmat
SPP, Carl Monroe

KCPL: Kansas City Power & Light (Transmission Owner), Jim Useldinger

MAAC/Horakh: Mid-Atlantic Area Council, John Horakh
MAAC/Kuras: Mid-Atlantic Area Council, Mark J. Kuras

MAPP: Mid-Continent Area Power Pool, Tom Mielnik (MEC), group chair. Includes:

MidAmerican Energy Company (MEC), Tom Mielnik, Dennis Kimm
Great River Energy (GRE), Delyn Helm
MH, David Jacobson
XEL, Dean Schiro
Otter Tail Power (OTP), Jason Weiers
Western Area Power Administration, Steve Sanders

MEC: MidAmerican Energy Company (Load Serving Entity), Tom Mielnik

NPCC: Northeast Power Coordinating Council, Guy Zito (NPCC), group chair. Includes:

TransEnergie (Quebec), Roger Champagne
New York Power Authority, Ralph Rufrano
Hydro One Networks (Ontario), David Kiguel
Nova Scotia Power, David Little
ISO New England, Kathleen Goodman, Dan Stosick
US National Grid, Peter Lebro
New York ISO, James Practico
Niagara Mohawk, Larry Eng
Independent Electricity Market Operator, Ontario, Khaquan Khan
New York State Reliability Council, Alan Adamson
NPCC, Guy Zito, John Mosier, Briam Hogue (satff)

NYSRC: New York State Reliability Council, Alan Adamson

R.Snow: Robert Snow, Individual Commenter (Small Electricity User).

SCGEM: Southern Company Generation & Energy Marketing (Brokers, Aggregators, Marketers), Roman Carter, group chair. Includes:

Roman Carter, Joel Dison, Lucius Burris, Tony Reed, Lloyd Barnes, Clifford Shepard.

SEMINOLE: Seminole Electric Coop.(TDU), K. Bachor & S. Wallace

SERC: Southeastern Electric Reliability Council, Bob Jones (Southern Company Services), group chair. Includes:

Alabama Electric Coop., Darrell Pace
Duke Power, Brian Moss
Entergy Services, Kham Vongkhamchanh
South Carolina Electric & Gas, Clay Young
South Carolina Public Service Authority, Arthur Brown
Southern Company Services, Bob Jones
Tennessee Valley Authority, Byron Stewart
SERC Staff, Pat Huntley

SOUTHERNCO: Southern Company Services, Inc. (Transmission Owner), Marc Butts, group chair. Includes:

Rod Hardiman,, Jonathan Gildewell, Bobby Jones, Marc Butts
Bill Pope – Gulf Power (Load Serving Entity)

SPP: Southwest Power Pool – Transmission Working Group, Ronnie Frizzell, group chair. Includes:

Arkansas Electric Coop Corp., Ronnie Frizzell
Sunflower Electric Power Coop., Norman Williams
Westar Energy, Donald Taylor
Kansas City Power & Light, Jim Useldinger
Southwestern Public Service, John Fulton
American Electric Power, Matt McGee
Empire District Electric, Sam McGarrah
Western Farmers Electric Coop., Mitch Williams
ETEC, John Chiles
Entergy, Mak Nagle
Associated Electric Coop., Inc., Jim Kistner
Southwest Power Pool, Alex Lau
Oklahoma Gas & Electric, Phil Crissup
City Utilities of Springfield, MO, Howard Conus
Aquila Networks, Alan Myers
Southwestern Power Administration, David Sargent

TVA: Tennesse Valley Authority (Government Entity). Includes:

David Till, David Marler, Brenda Eberhart, Darrin Church, Byron Stewart, William Tiller

WECC-1: Western Electricity Coordinating Council, Peter Mackin (TANC), group chair. Includes:

Arizona Public Service, Peter Krzykos
Pacific Gas & Electric, Chifong Thomas
Transmission Agency of Northern California (TANC), Peter Mackin
Basin Electric Power Coop, Matthew Stoltz
Western Area Power Administration, Bob Easton
Salt River Project, Charles Russell
Puget Sound Energy, Joe Seabrook

WECC-2: Western Electricity Coordinating Council, Ben Morris (PG&E), group chair. Includes:

Arizona Public Service, Baj Agrawal
British Columbia Transmission Corp., Phil Park
California ISO, Jeff Miller
Idaho Power, Ron Schellberg
Nevada Power, Rahn Sorensen
Pacific Gas & Electric, Ben Morris, Rick Padilla, Chifong Thomas
Sacramento Municipal Utility District, Dilip Mahendra
Salt River Project, Brian Keel
Southern California Edison, Dana Cabbell, Mohan Kondragunta
Snohomish County PUD, John Martinsen

WESTAR: Westar Energy, Inc. (Transmission Owner), Donald Taylor