ITCS Part 2 and 3 Report Comments

#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
1	Gabriel Adam (IESO)	9/27/2024	29	Figure 2.6	Which bucket (most, moderate, least limiting) doesn't determine prudent additions	Accept	That is correct. As this figure caused confusion at the AG, it was removed.
2	Thanh Luong (FERC)	9/27/2024	40	Table 4.1	Add the following note: There is a remaining deficiency after adding 1100MW of transfer capability from Wasatch.	Accept	Sentence added and asterisks included.
3	Tim Ponseti (SERC)	9/27/2024	19	Figure ES.2	Define / spell out TPRs on the graphic	Accept	Spelled out.
4	Tim Ponseti (SERC)	9/27/2024	19	Figure ES.2	Note that this graphic includes Tier 2 generation	Accept	Caveat added to the top of the picture.
5	Tim Ponseti (SERC)	9/27/2024	19	Figure ES.2	Note that grey bubbles do not necessarily mean no additional resources are needed	Reject	Caveat added to the top of the picture, but did not detail every study assumption in the picture.
6	Robert Entriken (EPRI)	9/27/2024	46	Chapter 5	Explain why transfer capability would change	Accept	Addressed.
7	David Jacobson (MH)	10/1/2024	ix	Executive Summary	The Exective Summary highlights "36 GW of additional transfer capability is recommended…" Chapter 5 does a very good job of descibing that this number was developed as per the congretional mandate but there are multiple options available (Page 46). I feel that some of this thinking is missing from the Executive Summary and needs to be added in case someone only reads up to this point in the report.	Accept	Added "at a glance" to provide this type of information.
8	David Jacobson (MH)	10/1/2024	19	Hydro Resource Availability	The reports says "…a monthly maximum capacity was created…". Did you mean monthly energy? The nameplate capacity of hydro doesn't change but the monthly energy is dependent on water conditions.	Accept	Changed capacity to availability. Further discussions will occur as part of the Canadian Analysis.
9	David Jacobson (MH)	10/1/2024	34	Table 2.3	The numbers for SERC-SE in iteration 1 and 2 don't look correct. Instead of 321 and 0, I believe it should be 386 and 321.	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report.
10	David Jacobson (MH)	10/1/2024	39	Table 3.6	Annual hours of resource deficiency are given in Table 3.6 but there is no discussion on a potential criteria. For resource adequacy, the planning reserve margin is calculated to meet a LOLE of 0.1 day/year or 1 day/10 years. Planning reserves are not sized to eliminate all loss of load as this would be cost prohibitive (and not prudent). Can a simple criteria be used for "transmission adequacy" in this study? For example, picking the average hours to be less than 2.4 or a single year's hours to be less than 24 (as acceptable without transmission additions) would bring the concept closer in line with resource adequacy. A probabalstic study would ideally be performed in the future.	Reject	The criteria/considerations are included in Chapter 2. These were reviewed with the ITCS Advisory Group.
11	David Jacobson (MH)	10/1/2024	44	Figure 4.3	It's not clear where the resources came from in Iteration 3 to supply ERCOT and SPP-S as no other region went down in margin.	Reject	Figure 4.3 shows the minimum daily margin which is not necessarily simultaneous.
12	David Jacobson (MH)	10/1/2024	44	Table 4.2	Should the numbers in Table 4.2 be observed in Figure 4.3? If that's the case then Figure 4.3 needs an update.	Reject	Both tables are correct but showing slightly different information.
13	David Jacobson (MH)	10/1/2024	91	Appendix F	There's no explanation why gas is accredited at 25%. Assuming gas supply is available, the accredited capacity should be very high.	Accept	Removed sentence which was misunderstood.
14	David Jacobson (MH)	10/1/2024	n/a	General	Overall the part 2 & 3 results report was well written.	No change	No change to report requested.
15	Vincent Fihey (HQ)	10/1/2024	13	Project Scope	I recommend adding a blue insert that summarizes what the study is and is not.	Accept	The new "at a glance" provides what it is / what it is not information.
16	Vincent Fihey (HQ)	10/1/2024	15	Selected Weather Years	Explain why weather years 2014 to 2018 were not selected.	Accept	Adding footnotes to explain.
17	Vincent Fihey (HQ)	10/1/2024	17	Load assumptions	Link to Appendix C is dysfunctional (leads to wrong page)	Accept	Corrected.
18	Vincent Fihey (HQ)	10/1/2024	42	New England	Just like the CHPE project in New York section, the New England Clean Energy project (NECEC) should be referenced here. NECEC is a new DC tie between Quebec and Maine that will increase the Qc to NE interregional transfer capability by 1200 MW. Construction of the project is well advanced and commissioning is planned for December 2025. CHPE and NECEC projects are in a similar stage of development.	Accept	Added.

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19	Vincent Fihey (HQ)	10/1/2024	45	Pronounced Benefits of Transfer Capability Across Interconnections	It is stated that "Despite these benefits, these interregional transfers may not be considered in power flow studies because the Interconnections are evaluated in separate databases and models." This is not true for Quebec Interconnection. The Quebec system modeling is included in the Eastern Interconnection PSS/E cases developed by MMWG.	Accept	Removed sentence.
20	Vincent Fihey (HQ)	10/1/2024	46	Chapter 5	Suggest replacing blue insert "There are several options for addressing the identified resource deficiencies" by "Increases to transfer capability is not the only option for addressing the identified resource deficiencies". Otherwise, several options could be interpreted as several transfer capability increases options.	Accept	Changed to "Increased transfer capability is one of many options..."
21	Vincent Fihey (HQ)	10/1/2024	46/48	"System studies" or "Regulatory or Policy Mechanisms and NERC Reliability Standards"	Include discussion regarding FERC Order 1920 and requirements for long-term regional transmission planning and how it can help maintain adequate interregional transfer capabilities.	Address in final report	This is noted in the Overview and will be included in the consolidated report.
22	Vincent Fihey (HQ)	10/1/2024	54	Energy Adequacy by Iteration Section	There is a typo in the first bullet: ...whether or nor transfer capability...	Accept	Corrected.
23	Vincent Fihey (HQ)	10/1/2024	n/a	General	In general, I think it is an excellent report, very well written and reflects the study that was performed.	No change	The Report Writing Team appreciates this encouragement.
24	Margaret Pate (NERC)	10/2/2024	n/a	Executive Summary	Consider moving scope up front (per EC recommendations of what's in / out of report), then Table ES.2 and then start to peel back how the conclusion was derived.	Accept	Added "at a glance" to provide this type of structure.
25	Margaret Pate (NERC)	10/2/2024	n/a	All	Figures are not crisp…i.e. pasted in well. If you want, Donna can tell you how to improve this.	Accept	This was an outcome of the pdf conversion for file size and will be improved in the future.
26	Margaret Pate (NERC)	10/2/2024	vi	Executive Summary	Key Observations: Do terms such as ERCOT, MISO-E, PJM-S, SERC-E, SERC-Florida and SPP-S need to be defined? E.g. See Figure D.2 for these areas.	Reject	Per Comms this is not necessary. These are footnoted in the exec summary and shown in detail in chapter 1.
27	Margaret Pate (NERC)	10/2/2024	ix	Executive Summary	Table ES.1 - Should there be a reference to the TPRs? I.e. Where are MISO-C, MISO-W, Oregon, PJM-E, PJM-W, SERC-C, SERC-SE, Southern California, Southwest, Wasatch Front, or Washington defined? E.g. See Figure D.2 for these areas.	Reject	An earlier footnote references to Chapter 1 where these can be found.
28	Margaret Pate (NERC)	10/2/2024	xii	Executive Summary	Footnote 24: Not sure the user would know to go into an assessment and look for the resource tier explanation. This link sends the user to the entire page - An explanation of Long Term Reliability Assessment (LTRA) resource tiers can be found here. <- Wouldn't it be easier to state what they are? E.g. Tier 1 is....	Accept	Updated footnote with brief description of Tiers and kept link for more information
29	Margaret Pate (NERC)	10/2/2024	16	Chapter 1	Scrolling through the report, noticed that FERC acronym is not defined but other agencies are….National Renewable Energy Laboratory (NREL), the Energy Information Administration (EIA), and FERC forms. First mention of FERC is on page v.	Reject	FERC was spelled out at first use - page v
30	Margaret Pate (NERC)	10/2/2024	17	Chapter 1	Is footnote 27 needed? See footnote 24.	Accept	Deleted footnote (duplicate)
31	Margaret Pate (NERC)	10/2/2024	22	Chapter 1	Consider a footnote to Form A….Demand response capacity was based on the LTRA Form A data submissions…are the methods and assumptions docs on the LTRA web page up to date?	Reject	There are already references that this comes from the LTRA and links are included elsewhere.
32	Margaret Pate (NERC)	10/2/2024	25	Chapter 2	Is this documented in the key decisions? ….This level was discussed and endorsed by the ITCS Advisory Group	No change	The criteria and considerations were reviewed by the ITCS Advisory Group and are included in Chapter 2.
33	Margaret Pate (NERC)	10/2/2024	26	Chapter 2	Consider better defininge EEA3….something like spelling out EEA at a minimum ...Energy Emergency Alert (EEA) 3 declarations are used by BAs to safeguard... (for BAs when actual capacity and/or energy deficiencies occur as defined by EOP-011-1)…bit in parens is probably too much	Accept	Removed "in an EEA3 event"
34	Margaret Pate (NERC)	10/2/2024	26	Chapter 2	Not sure the level should be capitalized….tight margin Level	Accept	Corrected

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35	Margaret Pate (NERC)	10/2/2024	26	Chapter 2	Does this coloring schema work if one is color blind or looking at the report in black and white? Figure 2.5 shows the hourly energy margin after interchange is scheduled (light blue line).	Address in final report	This will be considered for the final report
36	Margaret Pate (NERC)	10/2/2024	27	Chapter 2	Which Figure (2.5)? Three important points can be considered in Figure above	Accept	Corrected link
37	Margaret Pate (NERC)	10/2/2024	37	Chapter 3	Does this coloring schema work if one is color blind or looking at the report in black and white?...is that purple highlighting indicates	Address in final report	This will be considered for the final report
38	Margaret Pate (NERC)	10/2/2024	40	Chapter 4	NV refers to this as a project with different components, even though it is composed of serveral projects: proposed Greenlink projects	Accept	Changed to singular
39	Margaret Pate (NERC)	10/2/2024	40	Chapter 4	Should "if" be put in front of there? ...In other words, if there was a large-scale	Reject	This would incorrectly change the meaning of this sentence.
40	Margaret Pate (NERC)	10/2/2024	41	Chapter 4	Does the reader know what a Tranche project is? ….proposed Tranche 1 and conceptual Tranche 2 projects	Accept	Added "in the MISO Transmission Expansion Plan", also removed the conceptual Tranche 2 (not yet approved)
41	Margaret Pate (NERC)	10/2/2024	46	Chapter 4	Sounds a little snarky: Resources: Stringing wire (and in the transmission paragraph), perhaps installating more transmission capability or something like that…	Accept	Updated language.
42	Margaret Pate (NERC)	10/2/2024	55 - 77	Chapter 7	1. All those blank roles in the Total Transfer Capability Summyar and Resource Deficiency Events tables…maybe put n/a/ or something in the blank resouce deficiency events table where appropriate.... 2. Is the "*" needed as it is not pointing to anything within the table? Perhaps make it a subtitle?	Accept	Changed the asterisk to a note and added n/a for TPRs with no prudent additions
43	Margaret Pate (NERC)	10/2/2024	80	Chapter 9	1. Should this be a chapter or appendix? 2. Do you want a list of the observers vs. members for each group to cross check? E.g. On the EC, Dave, Bob and Gary are observers, not members. As consultants are employed by NERC, should they be listed?	Accept	Stays a chapter per Comms, but changed "NERC" to "Industry Expert" for the 3 consultants
44	Margaret Pate (NERC)	10/2/2024	83	Appendix B	might want to provide what the acronym ReEDS stands for = The Regional Energy Deployment System (ReEDS) is NREL's flagship capacity planning model for the power sector. ….National Renewable Energy Laboratory (NREL) capacity expansion model (ReEDS)	Accept	Updated
45	Margaret Pate (NERC)	10/2/2024	83	Appendix B	Footnote 41 hyperink returns an error: NREL ReEDS-2.0, 2007-2013 weather year, see EER_Baseline_AEO2022, https://github.com/NREL/ReEDS-2.0/blob/main/inputs/loaddata/README.md	Accept	Updated link
46	Margaret Pate (NERC)	10/2/2024	86	Appendix C	might want to improve the borders…Note differences between Table C.1. and C.2. E.g. See top and left hand sides.	Accept	Done
47	Margaret Pate (NERC)	10/2/2024	93	Appendix G	DNV Northeast Offshore Wind Profiles….add Det Norske Veritas in front of DNV	Accept	Updated.
48	Margaret Pate (NERC)	10/2/2024	97	Appendix H	Table H.1. - define outages which can be found in the GADS DRI, file:///C:/Users/patem/Downloads/GADS_DRI_2024.pdf - Section III-18	Accept	Added footnote to link to cause codes

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49	Will Sayers (SPP)	10/2/2024	46	Transmission	It does not have to be in this section specifically, but SPP would like to see additional verbiage that recognizes how other internal transmission and resource additions could solve the same potential deficiencies than through upgrades specific to that interface. For example, increasing SPP N to SPP S transfers could resolve a lot of the deficiencies seen in SPP South and be more beneficial and realistic than adding 800 MW of transfer capability between ERCOT and SPP S. It was noted that the recommended Prudent Additions to SPP South revolve around deficiencies seen during Winter Storm Uri; however, it was seen during this event that internal constraints impacted SPP more than external transfer capabilities. 800 MWs of transfer capability between SPP and ERCOT would not have been beneficial during this time which shows that increases to this interface - or other interfaces - may not be the only or best way to mitigate these deficiences.	Reject	The fact that planners have multiple options to address the identified deficiencies is noted in multiple places in the report.
50	Will Sayers (SPP)	10/2/2024	33	Other Considerations for Prudent Additions	The final bullet point mentions how grid switching facilities could reduce the need for Prudent Additions. There are multiple grid switching facilities between SPP and ERCOT. How are grid switchers counted, or not in the 800 MW interface recommendation?	Accept	Added sentence similar to other interfaces with grid switching resources
51	Will Sayers (SPP)	10/2/2024	37	2033 Energy Margin Analysis Results	The 2033 Energy Margin Analysis does not take into consideration planned transmission upgrades which could decrease the need for Prudent Additions. SPP has evaluated the transmission system under extreme winter conditions - specifically Uri and Elliott. This additional analysis has resulted in multiple EHV projects that would drastically increase SPP's transfer capabilities. While SPP understands that these considerations are difficult to incorporate, it should be recognized that the results of this study do not accurately depict - and possibly overinflates - the deficiencies seen for each region (if any) due to system planners already planning for such events. This could cause severe misunderstanding of the results and show deficiencies that might no longer exist. SPP would like additional language that better explains that these additions were left out and the recommended additions may not be as drastic as expressed.	Accept	Added reference to SPP's 2024 ITP based on follow-up emails.
52	Will Sayers (SPP)	10/2/2024	48	Regulatory or Policy Mechanisms and NERC Reliability Standards	Some Prudent Addition recommendations involve entities that are not under FERC jurisdiction. How would these Prudent Addition recommendations lead to recommendations from FERC?	Reject	FERC may make recommendations to Congress, but the study team did not attempt to address jurisdictional determinations.
53	Will Sayers (SPP)	10/2/2024	48	Regulatory or Policy Mechanisms and NERC Reliability Standards	What would these reliability standards look like? With the implementation of TPL-008, FERC Order 1920, BAL-502-RF-03, individual transfer capapbility studies, additional winter weather analysis, transfer capability studies regarding winter weather, and more, what are NERC's current thoughts on this?	Accept	Added language.
54	Mark Tremblay (Eversource)	10/2/2024	42	New England	The New England Clean Energy Connect(NECEC) project currently under construction between Québec and New England is likely to impact identified needs	Accept	Added sentence
55	Hassan Hayat (AEP)	10/3/2024	13	chapter 1	The model also included potential new transmission interfaces between geographically adjacent TPRs even if no transmission linkage currently exists.	No change	This is already the existing language
56	Hassan Hayat (AEP)	10/3/2024	34	chapter 2	table 2.3 has typos under SERC-CE. Iteration 1 is 386 and 2 is 321 which totals to 707	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report.
57	Hassan Hayat (AEP)	10/3/2024	42	chapter 4	section on multiplier effects is unclear, I recommend adding a specific example perhaps referring to specific hours in a region when this phenomenon was observed	Reject	The language already includes a reference to the SERC-E max deficiency hour example that was discussed extensively in Chapter 2.

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58	Colton Pankhurst (NR Canada)	10/3/2024	viii	Executive Summary	The current report notes "While there are several factors that transmission planners consider, including reliability, economics, and policy objectives, given NERC's role as the ERO, the ITCS focused solely on reliability, specifically in terms of energy adequacy, for these recommendations." It could also be good to mention here, or somewhere else very obvious in the executive summary, that increased transfer capability is one of the tools to address observed deficiencies, and this report is only looking at that one tool. This is noted at the beginning of chapter 1 and chapter 5 very clearly, but not in the executive summary as clearly.	Accept	Added "at a glance" to provide this type of information.
59	Colton Pankhurst (NR Canada)	10/3/2024	xi	Executive Summary	The text "Planners should consider mechanisms such as resource additions or demand management to address these concerns" is applicable to all deficiencies, and not only those where solely increasing transfer capability cannot mitigate energy adequacy risk. Potential re-framing could be something like "Planners would be required to consider mechanisms such as resource additions or demand management to address these concerns, rather than solely increasing transfer capability."	Accept	Deleted this sentence
60	Colton Pankhurst (NR Canada)	10/3/2024	xii	Executive Summary	In the final paragraph on "Recommendations to Achieve Transfer Capability (Part 3)", this could be a good place to mention more explicitly that transfer capability is one tool for adequacy, but others such as additional resources (maybe mentioning supply AND demand side) exist and should be considered.	Accept	This was already addressed in the third paragraph, but added additional language to make demand response even more apparent.
61	Colton Pankhurst (NR Canada)	10/3/2024	17	Chapter 1 - Resource Mix	The bullet describing methodology for 2033 case is slightly different than the methodology described on page 18, where the full methodology mentions using tier 2 and 3 resoruces, and in their absence tier 1, whereas the bullet just mentions generically using tier 2 resources. Potentially make these consistent.	Accept	Clarified language
62	Colton Pankhurst (NR Canada)	10/3/2024	34	Chapter 2	Typo in Table 2.3. For SERC SE, iteration 1 should be 386 MW, and 321 for iteration 2.	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report.
63	Colton Pankhurst (NR Canada)	10/3/2024	n/a	General	The report is very comprehensive and well written, kudos to you and the rest of the team.	No change	The Report Writing Team appreciates this encouragement.
64	Daryl McGee (SOCO)	10/3/2024	7	Executive Summary	The FERC definition of "prudence" should have a footnote reference as to where that definition came from. Is it assumed that the FERC definition is the same as the prudence requested by Congress?	Accept	Moved FERC call-out to footnote, included citation, and updated call-out box
65	Daryl McGee (SOCO)	10/3/2024	7	Executive Summary	In "Part 1 Key Observations" callout, it states in bullet 3 that the transfer capability as a percentage of peak load itself is not a measure of energy adequacy, but yet in Part 2 the minimum energy margin is a percentage of peak load and the recommended additional transfer capability is to reach a certain % of peak load. The statement in bullet 3 should be worded to say "Simply utilizing a generic percentage of peak load for transfer capability requirements is not an effective way to meet the needs of energy adequacy."	Accept	Removed the call-out box
66	Daryl McGee (SOCO)	10/3/2024	7	Executive Summary	There should be a reference in Part 2, that the TTC values are from study year 2024. This fact is important and should be highlighted here and in other areas of the report document.	Accept	Added footnote in the exec summary. This is also noted in the process overview illustration and in multiple other places.
67	Daryl McGee (SOCO)	10/3/2024	7	Executive Summary	"the ITCS is now making recommendations". This should be changed to "NERC is now making recommendations". The ITCS is the study, not the interpreter of its results. NERC needs to take ownership in the document for the recommendations being made.	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
68	Daryl McGee (SOCO)	10/3/2024	8	Executive Summary	change "interconnectedness" to "the interconnected nature" or something similar	Accept	Changed to interconnected nature
69	Daryl McGee (SOCO)	10/3/2024	8	Executive Summary	Paragraph 2 - reword sentence 3 to "As the final step in the process, NERC developed a list of recommended additions".	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.

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70	Daryl McGee (SOCO)	10/3/2024	8	Executive Summary	This should not be a footnote, but rather included in the body of the report (maybe even a call out like those already used for key points)	Accept	The new "at a glance" emphasizes that planned projects underway are not considered. Also added footnote in exec summary.
71	Daryl McGee (SOCO)	10/3/2024	9	Executive Summary	Shouldn't the same rounded methodology for prudent recommendation (to the nearest 100 MW) be applied here as well. In WY2, New York has a resource deficiency of 81 MW. Are we really that certain of the results in 2033. Recommend rounding and if so, changing the sentence that states "In all weather years evaluated...".	Reject	Decision was made to only round for the prudent additions, not the energy margin analysis.
72	Daryl McGee (SOCO)	10/3/2024	9	Executive Summary	The report uses the terms "energy inadequacy" and "energy deficiency" interchangably. Recommend selecting one and remaining consistent throughout the report. Since the description on page 8 states that the "ITCS evaluated the energy adequacy", recommend that term be used.	Accept	Changed "energy inadequacy" to "energy deficiency"
73	Daryl McGee (SOCO)	10/3/2024	10	Executive Summary	The graphics need better resolution. For example, the information shown in the bottom left of the figure is critical, but because of the low resolution it is difficult to read	Accept	This was an outcome of the pdf conversion for file size and will be improved in the future.
74	Daryl McGee (SOCO)	10/3/2024	11	Executive Summary	The report calls out SERC-SE and SERC-C as having "relatively low" transfer capability, but given that there was no resource deficiency identified at either a 3% or 6% margin means that the transfer capability is appropriately sized. I agree with the "one-size-fits-all" is inefficient and ineffective, but feel like NERC could go futher using the SERC-SE and SERC-C example of having the appropriate amount and mix of resources is more important than transfer capbility.	Accept	Added footnote
75	Daryl McGee (SOCO)	10/3/2024	11	Executive Summary	Last sentence of first paragraph: "…the ITCS concludes" to "…NERC concludes. Using NERC will carry more weight with the reader.	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
76	Daryl McGee (SOCO)	10/3/2024	11	Executive Summary	recommend changing sentence one, paragraph 2 to "In two instances, it was not possible to address all energy deficiencies, even by increasing transfer capability, due to wide-area resouce shortages indicated by the assumptions used in this study." Overall there needs to be more caveats in this report, such as "based on the assumptions". Most of the findings are shown in this report are made as definitive statements.	Accept	Added "at a glance" to provide this type of information.
77	Daryl McGee (SOCO)	10/3/2024	12	Executive Summary	The first full paragraph reads as that NERC decided manipulated the resource assumptions in order to identify areas for "prudent" additional transfer capability. More information should be provided at how NERC arrived at the assumptions and how they determined how to "strike a balance".	Accept	Updated language in this sentence
78	Daryl McGee (SOCO)	10/3/2024	12	Executive Summary	Change "the ITCS has aimed" to "NERC has aimed"	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
79	Daryl McGee (SOCO)	10/3/2024	12	Executive Summary	Change "The ITCS recommends the MW amount" to "The ITCS indicates the MW amount"	Accept	These are recommendations, so this particular verb was not changed, but the overall sentence was softened.
80	Daryl McGee (SOCO)	10/3/2024	12	Executive Summary	what are "transmitting utilities"? A better term might be "electric utility Transmission Planners" - using Transmission Planning clearly shows you involved expertise in the AG	Reject	Transmitting utilities is the language used in the FRA. The industry Advisory Group is noted in several places, however.
81	Daryl McGee (SOCO)	10/3/2024	12	Executive Summary	Change under Stakeholder Engagement section - "…informed through regular updates and opportunities for input" to "…informed through regular updates and provide opportunities for input".	Accept	Added
82	Daryl McGee (SOCO)	10/3/2024	13	Chapter 1	Again - the ITCS is a study. The recommendations made in this report are those of NERC. Need to change all instances where ITCS is referred to as an entity and change to NERC	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
83	Daryl McGee (SOCO)	10/3/2024	13	Project Scope	NERC should discuss in this section, the changes in scope made along the way based on the limited time to complete the study (e.g., not using 2033 TTC for recommendation determination).	Reject	The use of 2024/25 TTC values from Part 1 is noted in several places in the report.

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84	Daryl McGee (SOCO)	10/3/2024	14	Transmission Model	The year used should be stated here and more information provided. State that a 2024 model representing Summer and Winter base conditions were developed.	Accept	Added language
85	Daryl McGee (SOCO)	10/3/2024	14	Transmission Model	"dc" should be changed to "Direct Current (DC) tie line"	Reject	This is based on the NERC style guide and the Chicago style manual. Confirmed by comms.
86	Daryl McGee (SOCO)	10/3/2024	15	Transmission Interfaces	The arrows indiciating "flow direction" should be moved to Washington-Oregon which is used in the description included in the second paragraph.	Accept	Updated figure and language to be consistent
87	Daryl McGee (SOCO)	10/3/2024	16	Selected Weather Years	The historical weather data is shown as an example "(temperature, wind speed, solar irradiance, etc.)", but these assumptions are important and a full list of the data categories used should be explicitly listed.	Accept	Delete parenthetical - full list of parameters would be lengthy
88	Daryl McGee (SOCO)	10/3/2024	16	Selected Weather Years	I understand saying that the 12 Weather Years were not inclusive of all weather conditions, but that was NERC's decision to limit the number to 12. Recommend striking the last sentence "If a TPR does not show a need…". It sounds as if NERC is recommending that additional transfer capability be developed as a "what if" and that is even less prudent than some of the recommendations made in this report.	Accept	Deleted sentence. Years chosen were based on available data.
89	Daryl McGee (SOCO)	10/3/2024	17	Load Assumptions	The report states "This approach was revised by the ITCS Advisory Group" - is this sentence stating that the AG revised the approach to what was described at the end of Pg 16 or what was described on pg 16 was revised. Either way this sentence is not clear. Recommend changing to be more clear as to what the meaning is.	Accept	Typo - corrected to "reviewed"
90	Daryl McGee (SOCO)	10/3/2024	17	Resource Mix	"Unit-level information was made available…" - made available by who?	Accept	Deleted "was made available"
91	Daryl McGee (SOCO)	10/3/2024	18	2033 Resource Mix	Did NERC / Telos solict input from the utilities where tier 3 resources were utilized? Are the retirement amounts that triggered the need for Tier 3 resources listed in the report?	Reject	This was based on the 2023 LTRA data submissions
92	Daryl McGee (SOCO)	10/3/2024	25	Margin Levels	When describing the tight margin level, it is explicitly stated as "10% of load", but for clarity recommend stating "10% of the TPRs load" and adding that specificity when stating both the 3% and 6%.	Accept	Clarified language
93	Daryl McGee (SOCO)	10/3/2024	25	Figure 2.3	Recommend having 10% and 3% shown on the "% of Load" axis	Reject	These levels are defined in the report. Also, the minimum margin level applies to the 6% sensitivity as well, so a single value on the figure would be impractical.
94	Daryl McGee (SOCO)	10/3/2024	26	Energy Transfers	Add footnote to explain what an EEA3 event is. This event may not be fully understood by the wider audience of this report.	Accept	Deleted this clause as this level of specificity is unnecessary.
95	Daryl McGee (SOCO)	10/3/2024	26	Energy Transfers	A new term "target margin level" is introduced and only used once in the report. This needs to be defined or changed to Tight or Minimum margin level, whichever is appropriate here.	Accept	Corrected to tight margin level
96	Daryl McGee (SOCO)	10/3/2024	29	Prioritize Constrained Interfaces	In the third paragraph: "… analysis showed SERC-E in a resource deficiency during Winter Storm Elliott (WY2022)". I think it would be better to reword this to say "…during WY2022 (in which Winter Storm Elliott conditions where embedded)".	Accept	Changed to WY2022 with Winter Storm Elliott in parentheticals
97	Daryl McGee (SOCO)	10/3/2024	29	Figure 2.6	Figure 2.6 is referenced in the example above for 2024 energy margin analysis, but is based on the 2033 Case. Should this figure not represent 2024 differences?	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report.
98	Daryl McGee (SOCO)	10/3/2024	30	Step 4	This example is not clear on how the additional transfer is allocated. I'm not sure I follow how the scarcity weighting factors are calculated. More details (numbers) on the values used to arrive at the 60/40 split should be provided. Is 386 MW all SERC-SE had in reserves to provide to SERC-E? What Energy Margin are SERC-SE and PJM-W left once it is transfer additional MW to SERC-E? These questions are critical to fully understand the impacts and should be included as part of the example.	Reject	Transfer capability was added to TPRs with higher energy margins (measured as lower scarcity weighting factors) during tight margin hours as explained in Step 3.

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99	Daryl McGee (SOCO)	10/3/2024	31	Step 5	In the third iteration, SERC-SE "no longer has surplus resources to share". My understanding is that at this point, SERC-SE is now at the 3% Energy Margin. Is this prudent to base recommendations for transfer capability additions when the source system is effectively "tapped out" or should they be limited to delivering energy until they hit the 6% margin?	Reject	This parameter was reviewed by the ITCS AG.
100	Daryl McGee (SOCO)	10/3/2024	32	Prudent Additions Criteria	Bullet 1 under Prudent Additions Criteria is not a criteria, but is part of the methodology. It should be listed above the Prudent Additions Criteria as an important note that is bolded or made its own callout. This is an important point and will likely be the focus of much discussion once the report is released to the public.	Accept	Moved to the introductory paragraph
101	Daryl McGee (SOCO)	10/3/2024	32	Footnote 32	This sounds as if engineering judgment is used instead of the results of the analysis. Consider rewording.	Accept	Updated language
102	Daryl McGee (SOCO)	10/3/2024	32	Prudent Additions Criteria	In addition to the 300 MW threshold for Prudent Addition Criteria, there should be a similar threshold for number of hours. For example recommending 4100 MW of additional import capability for SERC-E for 9 hours (out of 105,000) may not reflect "sound engineering judgment" as referenced in fn 32. A threshold for hours in the 12 weather years should be developed and applied in addition to the MW threshold. If not included in this study report, that should at a minimum be a recommendation made for future studies.	Accept	A reference to future studies with additional sensitivities and alternative criteria was added in chapter 8.
103	Daryl McGee (SOCO)	10/3/2024	33	Prudent Additions Criteria	Where did the 4 hour threshold come from in sub-bullet 2?	Accept	Updated language
104	Daryl McGee (SOCO)	10/3/2024	33	Other Considerations	The last bullet that discusses connection to multiple interconnections is not clear. An example should be provided. Also, the term "switching capability" is not clear and should be defined.	Accept	Updated sentence
105	Daryl McGee (SOCO)	10/3/2024	34	Table 2.3	The numbers shown for SERC-SE don't add up. Table needs to be corrected to show for SERC-SE that iteration 1 = 386 MW and iteration 2 = 321 MW.	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report.
106	Daryl McGee (SOCO)	10/3/2024	35	2024 Energy Margin Analysis Results	The second paragraph establishes the benchmark using 2024 for resources and how by using this the study can better assess the future. The same would have been true for TTC. The 2024 TTC should have been the benchmark and the 2033 TTCs would have shown how the plans for the future impact the study results. This is where NERC and the ITCS falls very short. The apples-oranges comparisons will stand out and give rise to questions and concerns about the study and the resulting "prudent" recommendations.	Reject	This scope was decided by the Advisory Group. Where known, additional planned projects are noted.
107	Daryl McGee (SOCO)	10/3/2024	36	Table 3.2	Does calculating an average GWh make sense if the resource deficiencies on occurred in a single year?	Reject	Need a unit of measurement applicable to all TPRs and weather years
108	Daryl McGee (SOCO)	10/3/2024	37	2024 Energy Margin Analysis Results	in the paragraph just prior to the 2033 Energy Margin Analysis Results section which addresses prudent additions, there is a caveat that states the 2024 results "provide a useful test ase for the analysis, but ultimately are not used" and "instead, these recommendations were made based on the 10-year-out analysis". This statement needs to be modified to include that 2024 TTC calculations were used for the 2033 potential future and not overlook that important fact.	Reject	Repetitive comment. The use of 2024/25 TTC values from Part 1 is noted in several places in the report.
109	Daryl McGee (SOCO)	10/3/2024	40	Prudent Addition Recommendations	Stating this again: there should be a threshold added to the Resource Deficiency Hours that creates a distinction between the recommendations that are prudent additions and those that should be given more consideration in future evaluations.	Reject	Repetitive comment. These criteria were reviewed by the ITCS AG

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110	Daryl McGee (SOCO)	10/3/2024	42	Prudent Addition Recommendations - SERC-FL	Where did the details of projects come from? How do you know that the transfer capability will increase "somewhat" from this project? Did NERC perform a stability study or are you basing this on publicly availabe information (otherwise, this may be considered CEII and non-public transmission information)? These references should be removed from the write-up if NERC does not have results to point to. If the decision was made to not include 2033 TTC results then why speculate on increases due to projects at this point?	Reject	The project details were provided by FPL and the report provides only generic information.
111	Daryl McGee (SOCO)	10/3/2024	42	Prudent Addition Recommendations - SERC-E	Recommend changing the first sentence to "Recommended additions for SERC-E are driven by WY2022, which simulated Winter Storm Elliott conditions in the 2033 case, where the southeast…"	Accept	Updated language
112	Daryl McGee (SOCO)	10/3/2024	42	Interactive Effects	Need to also mention the potential negative impacts on other TPRs through loop flow. For example if 2 GW of additional transfer is required for an importing TPR, there could be impacts in other systems via loopflow that could require additional improvements or require the use of TLR in real-time to correct the issue.	Reject	This is not the appropriate place for a discussion of parallel flows - this is addressed elsewhere in the report
113	Daryl McGee (SOCO)	10/3/2024	43	Resource Saturation Effects	A similar concept which should be pointed out in this section is that for this analysis, there are TPRs with Resource Surplus that are used as the source for multiple other TPRs in 2033, under different weather years. This means that thousands of MW of export capability is shown as a "prudent" addition with the same TPRs as areas with an identified surplus. There is also an implied saturation here if multiple areas need resources and the paths for import involve the same resources. For example, SERC-SE is identified as an area with Resource Surplus for MISO-S, SERC-FL and SERC-SE. This could been seen as triple-counting on the need for SERC-SE to provide the resources that justifies the "prudent" recommendation. While each event driving the need on the respective interfaces, there could be a false sense of reliance on the same resources in SERC-SE if all the "prudent" recommendations were to be constructed.	Reject	The entire North American model is run at the same time, so there can be no "double counting" of resources. Also, in many cases, TPRs do not hit resource deficiencies at the same time.
114	Daryl McGee (SOCO)	10/3/2024	45	Relationship Between Generation and Transmission	There is a lot to unpack in this one paragraph. On one hand, NERC indicates that it is prudent to build additional transfer capability where a TPR is Resource Deficient and on the other hand states that building additional resources to keep from being Resource Deficient may still not be sufficient. Didn't NERC add resources to certain TPRs (Tier 1 and 2) just to have enough to transfer to other areas and recommend prudent additions to transfer capability? I agree with the last two sentences, but the justification in the first part of the paragraph is counter intuitive and may leave the reader more confused than convinced.	Accept	Added two sentences at the end of this paragraph.
115	Daryl McGee (SOCO)	10/3/2024	46	Chapter 5	NERC is making the recommendation for "increases to transfer capability" and should state that instead of saying the ITCS recommends.	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
116	Daryl McGee (SOCO)	10/3/2024	46	Chapter 5	I am in agreement with the first paragaph (subject to the previous comment). What you point out are some of the shortfalls in the ITCS which were not reviewed as part of this study. Based on these statements are the recommendations to increased transfer capability "prudent" if NERC did not address the issues stated in this paragraph?	Reject	ITCS addressed the congressional mandate but recognizes that there are other options to address energy deficiency risks.
117	Daryl McGee (SOCO)	10/3/2024	46	Chapter 5	How does paragraph 2 align with the Relationship Between Generation and Transmission? In this paragraph NERC states that planners can construct local generation to reduce energy adequacy risks, but earlier it is stated that local resources may have drawbacks.	Reject	These sections are consistent.

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118	Daryl McGee (SOCO)	10/3/2024	46	Infrstructure Enhancements	Not sure what the actual intent of this paragraph is, but it reads as if it is stating that a TPR must ensure it has sufficient resources to maintain transfer capability. Is NERC stating that it recommends that a source TPR must "ensure" it has resources to transfer to an adjacent TPR? If so, this recommendation is not appropriate and should be removed. If the intent was different then NERC needs to reword for clarity.	Accept	This has been reworded.
119	Daryl McGee (SOCO)	10/3/2024	51	Figure 6.1	By showing these TTC additions for the 6% margin, does that indicate that the sources for those transfers have sufficient surplus to send power to meet these needs and still maintain a 6% margin (e.g. SERC-SE to SERC-Florida)?	Reject	Yes, energy transfer did not occur when a TPR's margin was (or would drop) below the minimum margin level.
120	Daryl McGee (SOCO)	10/3/2024	70	TPR-Specific Results	This applies to all detailed results: it is not appropriate to use the 2024 TTC number and calculate a % of 2033 Peak Demand. If the % of peak demand needs to be shown, it should be 2024 TTC as a percentage of 2024 Peak Load.	Reject	The congressional mandate was to calculate the current transfer capability. It is articulated in the report that this was based on the 2024 summer and 2024/25 winter cases.
121	Daryl McGee (SOCO)	10/3/2024	78	Neighbor's Neighbor	Discussion here and p45 on Neighbor's Neighbor is one of the only reference to cost and benefits. Additionally, the need for a funding mechanism. These concepts should be discussed early on in the report and maybe expanded to include some discussion on cost causation.	Accept	Changed "funding mechanism" to "cost allocation mechanism"
122	Daryl McGee (SOCO)	10/3/2024	78	Expand Weather Datasets	Here NERC mentions "would increase confidence in the study's recommendations". What level of confidence does NERC or the AG have in this study. The overall "confidence in the study's recommendations" should be a key point of discussion in the executive summary. Recommend adding.	Accept	Updated sentence
123	Daryl McGee (SOCO)	10/3/2024	79	Establish Study Periodicity	NERC states that they and the RE's "are planning to conduct regular assessments" with no mention of industry involvement. Is it NERC's intent to peform this analysis with no industry involvement? If not, then recommend specifically stating how industry will be involved.	Accept	This will be rolled into the LTRA process and will of course include industry involvement
124	Daryl McGee (SOCO)	10/3/2024	90	Appendix E	More information needs to be provided. Are these generation capacities or something different?	Reject	The y-axis is labeled correctly, no change needed
125	Daryl McGee (SOCO)	10/3/2024	101	Appendix I	The focus on the actual occurances of Winter Storm Elliott during 2022 as shown in the various figures will likely raise the question regarding other areas that also had issues / deficiencies during the actual event that in the 2033 ITCS are now seen as having resource surplus and used to justify the increased import capability into SERC-E. There have already been questions about the results of the TTC numbers and Winter Storm Elliott.	Reject	The study results are based on the future resource assumptions detailed in the appendix.
126	Daryl McGee (SOCO)	10/3/2024	106	Appendix K	It is concerning that TPRs with Resource Surplus are allowed to deliver energy to a neighbor until it also hits the 3% minimum margin level and that recommendations for "prudent" additions to transfer capability are made. The amount that a neighbor is allowed to send to the neighbor in need should not go to the minimum margin level (3%), but rather the 6% tight margin level.	Reject	This parameter was reviewed by the ITCS Advisory Group.
127	Adria Brooks (DOE)	10/3/2024	N/A	General comment	Congratulations to the entire NERC team for pulling the analysis and report together on a short timeline. Thank you for the opportunity to review.	No change	The Report Writing Team appreciates this encouragement.
128	Adria Brooks (DOE)	10/3/2024	N/A	Upfront material	Define Transfer Capability up front using the NERC glossary. DOE understands the NERC definition to preclude generating capacity as transfer capability.	Reject	Transfer capability is already defined at first usage in the executive summary narrative
129	Adria Brooks (DOE)	10/3/2024	N/A	General comment relevant across many sections	Edit the document for misuses of the term Transfer Capability. There are sections of the document that refer to the ability to generate as Transfer Capability.	Accept	Addressed concern on page 46 which is noted in a separate comment.

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
130	Adria Brooks (DOE)	10/3/2024	vi	Exec Summary: Key Observations	The wording of the second to last bullet reads like NERC is taking a strong stance on an ongoing policy discussion in Congress, which the team has stated is not NERC's role. Suggest editing to be less combative while retaining accuracy: "Import capability needed to resolve reliability issues during extreme conditions varied significantly across the country; requiring regional specific transfer capability solutions."	Reject	No change. This is a direct conclusion of the study results - confirmed by management.
131	Adria Brooks (DOE)	10/3/2024	vi	Exec Summary: Key Observations	The fourth bullet refers to Interconnections and would be more accurate if read "Texas" instead of "ERCOT." Likely a modification will be needed for "Quebec" as well.	Reject	The Interconnection naming follows the NERC Glossary of Terms
132	Adria Brooks (DOE)	10/3/2024	vi	Executive Summary: Complex and Evolving Grid	This 2nd sentence ("With resources historically… operating challenges.") felt incomplete and hard to read. Suggest revising for clarity and to highlight importance of extreme events in this analysis—the focus of the ITCS analysis—and not just location of generation: "Historically, generation resources were located near load centers, which limited the need for mutual support between regions via the transmission system. Given increasingly extreme weather events and lower cost generation resources which are far from load centers, this is no longer the case, and neighboring regions are being called on more and more to support reliability"	Accept	This sentence has been updated.
133	Adria Brooks (DOE)	10/3/2024	N/A	General comment relevant across many sections	"Resources" is used as a synonym for "generators" throughout the report, which is not an obvious synonym to many readers. Suggest specify "generation resources" or "generation, storage, and demand-side resources" occasionally throughout report to make it more obvious.	Accept	Added footnote in exec summary
134	Adria Brooks (DOE)	10/3/2024	vii	Exec Summary: Study Need	The FERC definition of "prudence" highlighted in the textbox is not particularly relevant for the ITCS recommended prudent additions in the context of reliability. FERC talks about prudence in terms of whether investments were prudently made and it should allow recovery of those investments. Please either relate this statement to the modeling in the report narrative or choose a statement from the narrative to highlight in this text box. Suggested language: "Prudent additions are where additional transfer capability would improve identified instances of energy deficiency."	Accept	Moved FERC call-out to footnote, included citation, and updated call-out box

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135	Adria Brooks (DOE)	10/3/2024	vii	Exec Summary: Study Need	Suggest adding more to this description of “prudent additions” to better relate it to the modeling performed and to the limitations of the study as discussed during Advisory Group meetings. Suggested language in redline: "... and how to meet and maintain such transfer capability. In the context of this Study, “prudent additions” are where additional transfer capability would improve identified instances of energy deficiency. They do not consider other methods to resolve the deficiency (e.g. additional local resources, load management, demand response, energy efficiency, etc.). Furthermore, consistent with the ERO’s mission, the ITCS focuses on reliability and does not include economic justification for new and/or upgraded transmission facilities. As such, additional study of specific projects to meet the identified recommended transfer capability additions must be done to capture the full range of considerations that go into determining what investments are actually made. Conversely, the study does not identify all prudent transfer capability development opportunities that address reliability or economic development needs beyond the limited energy deficiency analysis performed herein. Thus, the prudent additions identified here exhibit reliability opportunities for transmission development incentives and additional analysis, but they do not necessarily replace ongoing	Accept	Added sentences based on this comment
136	Adria Brooks (DOE)	10/3/2024	viii	Exec Summary: Study Progress	Add references to all textboxes in the report so they do not provide standalone information. Those reading the full report will skip over unreferenced textboxes assuming they contain information covered elsewhere. Redline edits: "… for statuatory changes. See adjacent textbox for next steps."	Accept	Double-checked the executive summary and made an adjustment to ensure no unreferenced info
137	Adria Brooks (DOE)	10/3/2024	x	Fig ES.2.	Like figure but need higher quality image to read legend. Also recommend changing thickness of interface links consistent with the size of the capacity additions for colorblindness accessibility.	Accept	Legend size increased. Final report will seek to improve ADA accessibility.
138	Adria Brooks (DOE)	10/3/2024	xi	Exec Summary: Prudent Additions to Transfer Capability (Part 2)	As explained in Key Observations comment above, this phrasing ("The amount of... and ineffective" textbox) takes a strong position on ongoing Congressional policy debates. Suggest editing to be less combative while retaining accuracy: “The amount of capability needed to reliably serve customers during extreme conditions varied significantly across the country, requiring regional specific transfer capability solutions.”	Reject	No change. This is a direct conclusion of the study results - confirmed by management.
139	Adria Brooks (DOE)	10/3/2024	xi	Exec Summary: Prudent Additions to Transfer Capability (Part 2)	Same comment as above. Suggest revision: “Based on these findings, the ITCS concludes that region specific solutions for transfer capability additions will be needed.”	Reject	No change. This is a direct conclusion of the study results - confirmed by management.
140	Adria Brooks (DOE)	10/3/2024	xi	Exec Summary: Prudent Additions to Transfer Capability (Part 2)	The sentence related to ERCOT and Northern California would not be clear to someone engaging with the modeling for the first time. Suggest a rewrite that includes the specific weather events to make it more understandable: "Specifically, energy deficits remained even after increasing transfer capability by 15 GW to overcome shortfalls in ERCOT during Winter Storm Uri and by 1 GW to overcome shortfalls in Northern California during the 2022 heat event, respectively."	Reject	This information is contained in the table immediately following this sentence. A longer sentence would tend to decrease accessibility.

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141	Adria Brooks (DOE)	10/3/2024	xi	Exec Summary: Prudent Additions to Transfer Capability (Part 2)	The last sentence ignores the value of interregional transmission which could have been determined if the contribution from neighbors' neighbors had been modeled. This implies that generation and/or demand resources are the only solutions, which is unlikely to be true. Suggested revision for accuracy: "The modeling here only considered generation resource support from a deficit region's immediate neighbors, and not also from its neighbors' neighbors. Interregional transmission which spans multiple regions may have allowed ERCOT and Northern California to overcome their energy shortfalls in these instances. Planners could also consider mechanisms such as resource additions or demand management, such as load shed, to address these remaining deficits."	Reject	The scope of neighbors only was included earlier in the executive summary.
142	Adria Brooks (DOE)	10/3/2024	xii	Exec Summary: Recommendations to Achieve Transfer Capability (Part 3)	Redline edit to clarify "resources": "Where carefully planned, additional additional generation, storage, and demand-side resources…"	Accept	Added demand response. Storage is a generating resource.
143	Adria Brooks (DOE)	10/3/2024	13	Ch 1: Project Scope	This second bullet ("The relative merits of additional transfer capability versus...") appears to be the correct usage of the term transfer capability per the NERC glossary. There are other sections of the document that refer to adding generation as adding transfer capability which is incorrect. Please ensure this is consistent throughout the document.	Accept	Addressed concern on page 46 which is noted in a separate comment.
144	Adria Brooks (DOE)	10/3/2024	16	Ch 1: Selected Weather Years	The western wide-area 2022 heat event is not listed among the bullets of extreme events. Please confirm all events are included here	Accept	Updated
145	Adria Brooks (DOE)	10/3/2024	17	Ch 1: Resource Mix	This section is a good place to clarify that resources were assigned to the region they are geographically located within, regardless of ownership or agreements to serve a utility in a different region. This is important to include because it emphasizes that regions which appear resource deficient in the modeling may not actually be contractually, alleviating the anticipated concerns of regional policymakers. Add new paragraph between second to last and last paragraph that reads: "Resources were assigned to TPRs based on their geographic locations and contractual obligations between generation units and load in a different TPR were not considered. This is an appropriate modeling choice for determining the amount of transfer capability needed to move generation from one region to another. Given this and the modeled TPR boundaries, energy deficiency as modeled here does not imply that the representative Balancing Authority is failing to meet its resource adequacy obligations."	Accept	Add language as suggested
146	Adria Brooks (DOE)	10/3/2024	18-19	Figs 1.4 and 1.5	These two charts have inconsistent legend names/abbreviations for different resources, which makes them hard to compare. Please use consistent abbreviations	Accept	These figures have been updated
147	Adria Brooks (DOE)	10/3/2024	26	Ch 2: Step 1 Margin Level	I was very confused first reading the Step 3 section below and realized I did not know if a high or low scarcity factor would result in interface prioritization. Suggest this simple redline addition to make it more obvious. Please check statement for accuracy: "... most surplus capacity (i.e., the lowest scarcity weighting factor). If sufficient imports..."	Accept	Added parenthetical as suggested

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148	Adria Brooks (DOE)	10/3/2024	29	Ch 2: Step 3	I struggled to understand the example in this paragraph upon first read. The order of modeling operations, how the scarcity weighting factor was used, and whether generation or transmission was limiting was unclear. Revisions suggested for clarity: "... resources to share with SERC-E. Although not at their interface limits, additional transfer capability from PJM-S and SERC-C during this hour would not be beneficial, as there are no surplus resources in those TPRs. Neighbors PJM-W and SERC-SE are already exporting resources to SERC-E, but SERC-E has reached its transfer capability limit and cannot increase imports from either region. During this event, the PJM-W has the lowest scarcity weighting factor, followed closely by SERC- SE. The scarcity weighting factors indicate that transfer capability should first be added with PJM-W and then with SERC-SE to alleviate the resource deficiency in SERC-E."	Accept	Clarified language
149	Adria Brooks (DOE)	10/3/2024	29	Fig. 2.6	More is needed in the narrative to fully understand Figure 2.6. This figure was very distracting in the Advisory Group meeting and we spent a lot of time trying to understand it before realizing it wasn't an imperative figure to help us understand the results. Suggest spending more time describing the figure so it does not distract readers. Questions that came up for me which need more description to understand the figure include: Is this a visual representation of the scarcity weighting factors? How are the repeated calculations summarized here? Are they cumulative? Explain how you get one number for each regional pair from a repetitive temporal calculation. Are these three "limiting" thresholds representative of a numeric scarcity weighting factor threshold? Is that quantity relevant? Where is the tables of values corresponding to each interface in this report? What do the black lines mean? They aren't in the legend. Were these interfaces never found to be limiting?	Accept	This figure has been removed
150	Adria Brooks (DOE)	10/3/2024	30	Ch 2: Step 4	This is a minor, but recommend talking about the size of the incremental transfer capability additions as "one third" and not "33%." The 33% will be confused with the percentage allocations from neighbors. And since this incremental ITC step size is static, you can get away with using words instead of a numeric value throughout the narrative.	Accept	Changed to one third
151	Adria Brooks (DOE)	10/3/2024	30	Ch 2: Step 4	Can you better describe the conversation from weighting factor to percent regional allocation? As it stands I'm left to believe that the weighting factor and percent regional allocation are the same thing.	Reject	This is already described in Step 3
152	Adria Brooks (DOE)	10/3/2024	30	Ch 2: Step 5	Are the weighting factors also recalculated at each step to determine new percent allocations from neighbors?	Reject	Yes. The first paragraph in Step 5 is clear that steps 1-4 are repeated.
153	Adria Brooks (DOE)	10/3/2024	31-32	Figs 2.8 and 2.9	Recommend the resource deficiency value in Figures 2.8 & 2.9 be red font and not green. Green is used for resource sufficient regions in the right most portion of the figure and it is confusing.	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
154	Adria Brooks (DOE)	10/3/2024	31	Ch 2: Step 5	I find this portion of the sentence ("a further reduction of 964 MW, or 100% of...") more confusing than helpful. There are too many percentages used in this example and knowing that 100% of the additional transfer capability added in the last step equated to the intended reduction in resource deficiency doesn't add anything. Suggest revision: "... decreased to 70 MW thanks to the transfer capability added..."	Accept	Replaced 2024 scenario with 2033 since that is the focus of the report
155	Adria Brooks (DOE)	10/3/2024	31	Ch 2: Step 5	I don't think discussing this as a reduction of 964MW only to be right-sized in next step is a detail that the reader needs to know, especially since it isn't expanded upon in the sixth step. I'm sure there are many "programmatic" modeling details not explained in the report. I would update figure 2.9 and the explanation here to show that only 70 MW of transfer capability is added in the final step. The detail about programmatic final step and right-sizing after can be footnoted it needed	Reject	The subsequent section describes how the programmatic results from steps 1-5 are finalized.
156	Adria Brooks (DOE)	10/3/2024	32	Ch 2: Step 6 Prudent Addition Criteria (and Ch. 8)	Recommend exploring how these criteria compare to other reliability metrics in Chapter 8 "Future Work". Additional sensitivities on these criteria—as was done for the 6% minimum margin level—would also be informative and should be added to Future Work. Would prioritize adding planned transmission additions to future year base cases, a minimum number of resource deficient hours threshold, and any criteria that help resolve the wide-area events which could not be resolved here.	Accept	Added sentence to study periodicity in Chapter 8
157	Adria Brooks (DOE)	10/3/2024	33-34	Ch 2: Step 6 Example of Prudent Additions	Recommend moving this example to top of this step 6 subsection ahead of prudent addition criteria. Since the previous steps were dominantly focused on the example, I would finish it out first and then move into the criteria and considerations for calculating prudent conditions afterward. I had already switched my brain to thinking about the criteria generally and it was confusing to go back to the example	Reject	Current format follows the pattern of the previous steps - describe the step then apply it to an example.
158	Adria Brooks (DOE)	10/3/2024	36	Ch 3: 2024 Energy Margin Analysis Results	Glad to see this discussion of ERCOT results for additional weather years and not just 2021 (Uri)	No change	No change to report requested.
159	Adria Brooks (DOE)	10/3/2024	36-39	Tables 3.2, 3.3, 3.5, 3.6	The averages are incorrectly calculated in this and related tables (Tables 3.2, 3.3, 3,5, 3.6). Please recalculate and use consistent significant figures to help ensure precision. Also, please add the units (GWh/yr) to either the table caption or to the average column header specifically (since the average must show year in the denominator to be accurate, where as this is inherent in the other columns). Units are needed to make the average results more understandable.	Reject	We did not find any calculation errors. Decision was made to only round for the prudent additions, not the energy margin analysis. Average columns would be GWh/yr as you noted, but should be intuitive.
160	Adria Brooks (DOE)	10/3/2024	38	Table 3.4 (and similarly shaded tables)	Were the blue, yellow, and purple cell shading all checked for color-blindness or for gray-scale? I don't think there is enough contrast between these colors for color-blind folks to distinguish between them	Address in final report	We will seek to improve ADA-accessibility

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161	Adria Brooks (DOE)	10/3/2024	38	Ch 3: 2033 Energy Margin Analysis Results	This sentence ("This is primarily... energy limited resources (e.g., battery storage).") appears inaccurate to the modeling details and is not supported by the evidence in the study. It seems to blame the changing load and resource mix for energy shortfalls, and not the interactions between generation, transmission, and load during extreme events, which is more the focus of this study. Given the parameters of the study, the modeled resource deficiencies would be the result of future transfer capability investments not being modeled and/or not keeping up with load growth in future years. The study did not consider which generation types failed during each weather event, so we cannot say definitively it is the mix of different resource types which are at fault. Suggest revising for accuracy: "This is primarily due to tightening energy margins driven by the interactions of large load growth, the changing resource mix, increasingly extreme weather events, and inadequate future transfer capability modeled in the study."	Accept	Updated language.
162	Adria Brooks (DOE)	10/3/2024	40	Ch 4: Recommendation Additions	Recommend avoiding references to in-development projects. Calling out specific projects in this report is equivalent to NERC identifying specific solutions and choosing winners and, by omission of other projects at equivalent stages of development, losers. If wish to acknowledge ongoing transmission development that is not included in the modeling, then suggest choosing a development status threshold and then applying that threshold to ALL currently in-development projects in each TPR. For example, could only include projects currently under construction (e.g., keep Champlain Hudson) or projects included in approved regional transmission plans (e.g., keep Champlain Hudson and LTRP Tranche 1) and remove the rest. Please be consistent with whatever method is chosen. However, it is important to note that planned transmission additions were not considered in the 2033/2034 base cases and the identified deficiencies will be lower with new transmission coming online. That could be done generically and not by naming specific projects. See suggested addition following first paragraph and before Table 4.1: "Transmission projects currently under development were not considered when modeling the 2033/2034 base case. It is likely that these projects will help provide a portion of the recommended transfer capability additions identified here. The contribution of these projects to transfer capability needs should be further evaluated. Likewise, several existing processes—such as the MISO Long Range Transmission Planning and the SPP-MISO Joint Transmission Interconnection Queue processes—can serve as models to identify specific solutions to meet the interface transfer capability recommendations."	Accept	Added paragraph to articulate the rationale (and limitations) of these inclusions.
163	Adria Brooks (DOE)	10/3/2024	40	Ch 4: Northern California	Unless choose to keep all projects throughout U.S. at an equivalent stage of development, suggest deleting "The proposed Greenlink projects could help meet this transfer capability increase."	Reject	Added a paragraph and footnote recommending that readers review the full regional transmission expansion plans and that listing does not constitute endorsement.
164	Adria Brooks (DOE)	10/3/2024	41	Ch 4: ERCOT	If choose to keep the specific projects which could alleviate a portion of identified transfer capability in other regions, then also name projects currently under development between ERCOT and adjoining regions for consistency.	Accept	Added language to address.

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165	Adria Brooks (DOE)	10/3/2024	41	Ch 4: SPP-S	Reference to "individual lines" is a likely typo. “Individual lines” weren’t modeled in Chapter 1. Is this the same as “individual transfer capabilities” used in the next sentence? Recommend aligning with the “individual interface” and “total interface import” terminology used in Chapter 1	Reject	This sentence is stating that everything is at an interface level - we are not calculating flows on individual lines
166	Adria Brooks (DOE)	10/3/2024	41	Ch 4: MISO-E	Reference to 160MW between MISO regions is one place where the modeled TPR boundaries are skewing the current capability. I would guess there are more existing transmission lines connecting these two MISO subregions through the PJM-W TPR boundary used in the modeling, so it appears like high transmission connections between each of the subregions and PJM instead of between one another. If MISO representatives agree, then may be worth just a footnote specifying that modeling simplifications were made.	Reject	There are no other direct connections between MISO-W and MISO-E.
167	Adria Brooks (DOE)	10/3/2024	41	Ch 4: MISO-E	Unless choose to keep all projects throughout U.S. at an equivalent stage of development, recommend deleting "Some proposed Tranche 1 and conceptual Tranche 2 projects under evaluation have the potential to significantly increase the transfer capability into lower Michigan."	Reject	Removed Tranche 2 as it has not been formally approved. Tranche 1 has been approved. Added a paragraph and footnote recommending that readers review the full regional transmission expansion plans and that listing does not constitute endorsement.
168	Adria Brooks (DOE)	10/3/2024	41	Ch 4: MISO-S	Unless choose to keep all projects throughout U.S. at an equivalent stage of development—in this case all generators which sit on the TPR seams--recommend deleting "The ability of the Frontier generating station to switch between MISO-S and ERCOT may address a portion of the need."	Reject	We are being consistent in noting where generation resources can switch between Interconnections which may offset some need for additional transfer capability.
169	Adria Brooks (DOE)	10/3/2024	41	Ch 4: SERC-FL	This sentence ("A planned relocation... capability somewhat.") strikes a better balance of naming specific solutions only to highlight additional transfer capability limitations that cannot be resolved solely from additions alone. Strive for consistency across all regions in how specific solutions are discussed.	Reject	Added a paragraph and footnote recommending that readers review the full regional transmission expansion plans and that listing does not constitute endorsement.
170	Adria Brooks (DOE)	10/3/2024	41	Ch 4: New York	Unless choose to keep all projects throughout U.S. at an equivalent stage of development, recommend deleting "The planned Champlain Hudson Power Express is likely to address a significant portion of this need. The ability of the Beauharnois generating station to switch between Québec and New York may also address a portion of the need."	Reject	Added a paragraph and footnote recommending that readers review the full regional transmission expansion plans and that listing does not constitute endorsement.
171	Adria Brooks (DOE)	10/3/2024	43	Ch 4: Resource Saturation Effects	“Northern California” or “California North”? I see many instances of both terms throughout document. Check that all TPRs are referred to consistently	Accept	
172	Adria Brooks (DOE)	10/3/2024	43	Ch 4: Resource Saturation Effects	Suggested revisions for clarity: "... resources or possibly additional transfer capability to a “neighbor’s neighbor” to access surplus energy. This saturation effect underscores the limitations of relying solely on direct-neighbor interregional transfers..."	Accept	deleted clause
173	Adria Brooks (DOE)	10/3/2024	45	Ch 4: Relationship btw Generation and Transmission	Performing this study on a regular cadence will also be able to capture the relationship between evolving generation and transmission. Suggest highlighting that here by adding a concluding sentence to this paragraph: "Future iterations of this report report would take new installed or retired generation and transmission facilities into account, and the recommended transfer capability additions will update accordingly."	Accept	Updated language in Chapter 8 (Future Work)
174	Adria Brooks (DOE)	10/3/2024	45	Ch 4: Pronounced Benefits of Transfer Capability Across Interconnections	Suggest referring to the "Texas Interconnection" instead of "ERCOT" here since discussing interconnection seams issues and not system operator issues	Reject	The Interconnection naming follows the NERC Glossary of Terms

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175	Adria Brooks (DOE)	10/3/2024	45	Ch 4: Pronounced Benefits of Transfer Capability Across Interconnections	Happy to see this recommendation "… Interconnections should work towards a wider area planning approach that would help address this issue."	No change	No change to report requested.
176	Adria Brooks (DOE)	10/3/2024	46	Ch 5	As it stands, the opening paragaph suggests that interregional transfer capability aditions cause unresolveable reliability issues, which need not be the case. Suggest revisions in two places to clarify: "… that must be carefully considered and mitigated." and "...other times that must be considered and mitigated in the planning process."	Accept	Updated language.
177	Adria Brooks (DOE)	10/3/2024	46	Ch 5	Anticipate that this section will be revised based on Advisory Group survey feedback, including the order of solutions. Note that the solutions identified in the survey differ somewhat from those discussed here.	Accept	Reordered this chapter to better differentiate between "meet" and "maintain"
178	Adria Brooks (DOE)	10/3/2024	46	Ch 5	The order and hierarchy of solutions is confusing and not clear from the header size alone (e.g., are NERC Standards a suggested solution meant to fall into this solution set or a standalone section?). Recommend the hierarchy be dropped such that each solution stands on its own and the following order is used: 1. Transmission 2. Advanced conductors (if not combined with “transmission” as already done) 3. Dynamic line ratings 4. Power flow controllers & FACTS 5. Operational coordination 6. Remedial action schemes & redispatch 7. Resources	Accept	Reordered this chapter to better differentiate between "meet" and "maintain"
179	Adria Brooks (DOE)	10/3/2024	46	Ch 5	In addition to the list of solutions identified here, recommend interregional operational coordination to efficiently operate interregional transfers and effectively share resources between neighbors be added as a solution	Accept	Added

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180	Adria Brooks (DOE)	10/3/2024	46	Ch 5: Infrastructure Enhancements	Generation is necessary to utilize transfer capability, but is not itself a transfer capability solution (per NERC's own definition of transfer capability). Furthermore, the interactions between generation and transmission/transfer capability are nuanced and that is not adequately explained here. A reader just jumping to the solutions section may walk away thinking 3GW of recommended transfer capability could be mitigated with 3GW of generation. Several edits were made for clarification and for accuracy; namely to highlight generation as a solution that must be appropriately modeled, but as transfer capability itself. Brought some NERC-provided language from preceding down to help clarify here. Note that deleted text not shown in redline in Excel. "Generation and storage resources can enhance a region's own energy adequacy. With adequate transmission, and proper operating agreements, excess generation can be used to aid other regions in a resource deficiency. The ITCS focused on transfer capability as the primary infrastructure solution, which is largely attributed to transmission capacity. However, transmission is only one side of the equation when it comes to maintaining energy adequacy. A region can build more local generation and obviate the need for transfer capability with a neighbor. There must be a sufficient amount of available resources at the other end of the line to be able to utilize transfer capability and aid a neighboring region in an energy deficiency. To plan for a beneficial increase in ITC it must be shown that sufficient generating resources are or will be in place to utilize the transfer capability. As discussed previously, the relationship between generation and transmission is nuanced and it is important to consider that adding local resources to mitigate deficiencies may also be subject to the same constraints that caused the initial challenge, such as fuel supply restrictions. The contributions of generating resources to offset the need for future transfer capability additions must be appropriately modeled."	Accept	The language has been re-worded.
181	Adria Brooks (DOE)	10/3/2024	46	Ch 5: Infrastructure Enhancements	Since this is a transfer capability study and not a generation study, move "transmission" section to be the first solution presented. Presenting a transfer capability solution ahead of the resources solution will make that discussion more understandable.	Accept	Reordered this chapter to better differentiate between "meet" and "maintain", although not exactly in the order proposed
182	Adria Brooks (DOE)	10/3/2024	46	Ch 5: Infrastructure Enhancements	Recommend being more decisive and positive in the discussion of transmission as a solution to meet the identified need by using a more concrete opening sentence: "Building new and reconductoring existing transmission lines between TPRs are effective transfer capability solutions. Transmission increases the ability to transfer energy between regions, but must be carefully coordinated to not create other reliability problems."	Accept	Updated language.
183	Adria Brooks (DOE)	10/3/2024	46	Ch 5: Infrastructure Enhancements	Note that reconductoring is presented as a separate solution further down. Should either be brought in here or completely separated (though not everyone considers it a GET and its closer to an infrastructure enhancement.) Edits made to this section to reflect reconductoring solution more accurately, but can be moved if choose to separate reconductoring as a separate solution: "Reconductoring existing transmission lines with conductors that have higher ratings can increase transfer capability without a significant expansion in rights-of-way. "	Accept	Updated language.
184	Adria Brooks (DOE)	10/3/2024	46	Ch 5: Infrastructure Enhancements	Consider adding a brief discussion of AC vs. DC technologies in the transmission section, especially the role of DC in cross-interconnection connections.	Accept	Added clause and footnote

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185	Adria Brooks (DOE)	10/3/2024	46	Ch 5: System Studies	These types of system studies will be required for whatever solutions are developed and do not serve as a standalone solution. Suggest putting after all solutions as a separate section discussing the importance of additional studies in vetting all identified solutions.	Accept	Added to the introductory section
186	Adria Brooks (DOE)	10/3/2024	47	Ch 5: DLRs	Revision added for accuracy in how DLRs can be used in planning studies: "... upgraded. Localized weather conditions are difficult to predict more than a day or two in advance so planning studies beyond the operational time horizon may still need to rely on average seasonal weather conditions to determine the contribution from dynamic line ratings."	Accept	Updated language.
187	Adria Brooks (DOE)	10/3/2024	47	Ch 5: Advanced conductors	Reconductoring was already mentioned in transmission solution subsection above. Recommend moving this to Infrastructure Enhancements above, either within or separate from transmission subsection.	Accept	This has been reordered
188	Adria Brooks (DOE)	10/3/2024	47	Ch 5: Power Flow Controllers	Something is lacking in the PFC subsection. This is mostly a definition of PFCs but does not explain how they can be used to increase transfer capability in planning studies. Please expound on this.	Accept	Updated language.
189	Adria Brooks (DOE)	10/3/2024	47	Ch 5: Remedial Action Schemes	Given the clarification above that conservative DLR contribution assumptions must be made to include them in planning, can a sentence be added about how to include RAS in planning studies?	Accept	Updated language.
190	Adria Brooks (DOE)	10/3/2024	47	Ch 5: Maintenance and Planning	Recommend, like System Studies, this be discussed as something that must be done to maintain any solutions identified, and not as a standalone solution.	Accept	Reordered this chapter to better differentiate between "meet" and "maintain"
191	Adria Brooks (DOE)	10/3/2024	48	Ch 5: Regulatory or Policy Mechanisms	Again, recommend language that does not take a stance on ongoing policy debate while still retaining accuracy: "As seen in the results of Part 1 and Part 2, transfer capability needs vary by region and regionally specific solutions must be considered to ensure energy adequacy"	Reject	No change. This is a direct conclusion of the study results - confirmed by management.
192	Adria Brooks (DOE)	10/3/2024	49	Ch 6	Appreciate the up front framing of the sensitivity analyses	No change	No change to report requested.
193	Adria Brooks (DOE)	10/3/2024	49, 52	Tables 6.1, 6.5	Same comment about contrast check of blue, yellow, purple cell shading for colorblindness	Address in final report	Address in final report.
194	Adria Brooks (DOE)	10/3/2024	49	Tables 6.2 and 6.3	Please confirm all averages are calculated correctly and add units	Reject	Confirmed that the averages were calculated correctly (including years with zero deficiencies).
195	Adria Brooks (DOE)	10/3/2024	51	Fig 6.1	Really like the chart. Please also include the table of data used to produce Figure 6.1. It is unclear what exactly is being charted without the associated table that matches the 3% results. For example, not additional transfer capability is shown for ERCOT, though Table 6.4 shows an increased max resource deficiency. There may not be any more recommended additions as a result, but seeing the table would clarify.	Reject	Since this was a sensitivity analysis, and to avoid potential confusion with the recommended prudent additions, the team elected not to include the interface-specific results.
196	Adria Brooks (DOE)	10/3/2024	54	Ch 7	Found a few typos on this page: "addtions" --> "additions"; "nor" --> "not"; "represents" --> "represent"	Accept	Corrected
197	Adria Brooks (DOE)	10/3/2024	54	Ch 7: Capacity and Load Data Section	“Energy limited” is confusing term to an outsider. What about changing this in the narrative and all result tables to “Storage + DR”?	Reject	This is defined in first use on page 48. The study differentiated between pumped storage hydro and battery storage.
198	Adria Brooks (DOE)	10/3/2024	78	Ch 8	This is a great list of future study improvements. Consider adding changes in prudent additions criteria (such as a threshold of minimum resource deficient hours) and changes in regional boundaries.	Accept	Updated language in Chapter 8 (Future Work)
199	Adria Brooks (DOE)	10/3/2024	78	Ch 8: Evaluate Transfer Capability During Extreme Weather Events	Suggest clarifying this future work is to evaluate *existing* transfer capability during extreme events. As written it seems like evaluating any transfer capability during extreme events was not performed, though that was the crux of part 2. Suggested revisions for clarity: "Future work should also focus on evaluating existing transfer capability during the representative times of extreme weather events"	Accept	Updated language in Chapter 8 (Future Work)

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200	Adria Brooks (DOE)	10/3/2024	78	Ch 8: Evaluate Transfer Capability During Extreme Weather Events	Does NERC think this modeling choice ("Part 1 results were based on summer and winter peak demand cases, but did not account for the specific weather conditions that led to resource deficiencies identified in Part 2.") undermines the results of the study? Please add a sentence why not	Accept	The study team does not believe that this undermines the study work, as the cases chosen represented high stress conditions. Since future studies are envisioned, however, this report calls out further opportunity for enhancement.
201	Adria Brooks (DOE)	10/3/2024	78	Ch 8: Probabilistic RA Analysis	Does this "12" refer to the weather years or the number of extreme events found across the 12 weather years? Suggested revision for clarity, but please confirm accuracy of statement: "… than just those found in the 12 weather years. This expansion..."	Accept	Added "weather years" to clarify
202	Adria Brooks (DOE)	10/3/2024	88	Appendix D	Please introduce Figure D.3 in the narrative and why ReEDS regions are shown	Accept	Deleted Figure D.3 and associated sentence.
203	Adria Brooks (DOE)	10/3/2024	90	Fig E.1	There is no discussion of this figure E.1 in the Appendix. Please provide something as an introduction, even if brief. Please explain why are winter capacities not compared	Accept	Updated the appendices.
204	Prabhu Gnanam (ERCOT)	10/3/2024	VII	Executive Summary	"The Part 1 study found that transfer capability varies widely across North America, with total import capability varying between 1% and 92% of peak load." Can NERC provide the percentage numbers with respect to peak net load?	Reject	This information is available upon request but will not be included in the report.
205	Prabhu Gnanam (ERCOT)	10/3/2024	IX	Executive Summary	Can the report replace the WY1-12 in Table ES.1 to show the actual year eg. WY11 to WY-2023?	Accept	Added footnote in exec summary
206	Prabhu Gnanam (ERCOT)	10/3/2024	XI	Executive Summary	Agree with the recommendation "Planners should consider mechanisms such as resource additions or demand management to address these concerns." ERCOT notes that the Texas Legislature in 2023 established the Texas Energy Fund (TEF) In-ERCOT Generation Loan Program to provide approximately $5 billion in loan funding for new dispatchable generators. The Public Utility Commission of Texas (PUCT) has identified approximately 8,500 MW of generation that has been proposed under this program. This new generation is expected to mitigate the sorts of energy deficiencies and the resulting transfer capability need identified in this study.	Reject	We worked from 2023 LTRA data and are not revisiting study assumptions at this time.
207	Prabhu Gnanam (ERCOT)	10/3/2024	XI	Executive Summary	In Table ES.2, can NERC specify whether the total addition represents the thermal capacity or the transfer limit needed (which can be different from the voltage or other stability constraints)?	Accept	Changed header to "Additional Transfer Capability (MW)" in Table ES.2
208	Prabhu Gnanam (ERCOT)	10/3/2024	18/19	Chapter 1	Figures 1.4 and 1.5 show the capacity for the 2024 and 2033 cases, respectively. Can NERC provide an incremental change in the capacity between the 2024 case and the 2033 case?	Accept	The appendix has been updated to provide additional information.
209	Prabhu Gnanam (ERCOT)	10/3/2024	21	Chapter 1	" battery storage was between two and four hours based on trends and available battery storage information from the EIA Form 860". Can NERC provide the energy duration of battery storages modelled for each TPR?	Accept	Updated language and added footnote.
210	Prabhu Gnanam (ERCOT)	10/3/2024	52	Chapter 6	In Table 6.5, rather than performing "2033 Tier 1 Only Case" study for the ERCOT region, it is more appropriate to perform a sensitivity study to include more dispatchable resources since the Texas Energy Fund and recently approved state-level reliability standard will lead to more build-up of dispatchable resources in the ERCOT Region.	Reject	We worked from 2023 LTRA data and are not revisiting study assumptions at this time.
211	Prabhu Gnanam (ERCOT)	10/3/2024	62	Chapter 7	In the "Capacity and Load Data" table, the thermal resource capacity only increases from 73,557 MW to 74,750 MW. The study did not include potential future dispatchable resource additions in ERCOT resulting from regional initatives/policies (Ex. Texas Energy Fund)	Reject	We worked from 2023 LTRA data and are not revisiting study assumptions at this time.
212	Prabhu Gnanam (ERCOT)	10/3/2024	62	Chapter 7	In the "Resource Deficiency Events" table, can NERC provide the output from Energy Limited resources at the time of max energy deficiency?	Reject	This information is available upon request but will not be included in the report.
213	Prabhu Gnanam (ERCOT)	10/3/2024	62	Chapter 7	In the "Capacity and Load Data" table, can NERC provide peak demand for all weather years?	Reject	This information is shown in Appendix C

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214	Brad Woods (TRE)	10/3/2024	vi	Executive Summary	Please consider stating that 'Key Observations' included in the Executive Summary (page vi) is based on 2033/2034 Analysis. It's not clear to the reader that if these deficiencies currently exist or based on a future year.	Accept	Added "at a glance" to provide this type of information.
215	Brad Woods (TRE)	10/3/2024	80	Chapter 9: Acknowledgements	Please remove a "t" from Shirley's last name. Her last name one "t": Shirley Mathew	Accept	Corrected
216	Brad Woods (TRE)	10/3/2024	62	Chapter 7: TPR-Specific Results	Please change the value of the Front Range to ERCOT transfer capability in the "Recommended Transfer Capability" map from 4,200 to 6,700.	Accept	Corrected
217	Brad Woods (TRE)	10/3/2024	62	Chapter 7: TPR-Specific Results	Can the MW amount of Transfer Capability added for each iteration be added to the "Energy Adequacy by Iteration" chart? For example, can the transfer capability (MWs) added for ERCOT for iteration 1, for iteration 2, etc be added to the rows in this chart? I believe this would help the reader understand how the prudent transfer capability additions were determined.	Withdrawn	This suggestion was withdrawn after further discussion.
218	Robert Entriken (EPRI)	10/3/2024	9	Executive Summary	Ambiguous context for this statistic. Add 'in one of the TPRs'.	Accept	Added "in ERCOT" for context
219	Robert Entriken (EPRI)	10/3/2024	12	Executive Summary	Please see https://en.wikipedia.org/wiki/Final_solution	Accept	While this language was clear in context, it has been updated.
220	Robert Entriken (EPRI)	10/3/2024	12	Executive Summary	Isn't only Capacity deficiency addressed in the study? (In general in the report at several places energy deficiency is mentioned but I think only capacity deficiencies are evaluated - I haven't seen how long would the deficiency persist)	Reject	ITCS is specifically looking at energy adequacy risk, not capacity.
221	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	In this context I think load outage is less of a problem than unexpected extremely high demand	Accept	Update language for clarity
222	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	sounds like four types of outages. Hydro?	Accept	Update language for clarity
223	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	More specifically 'import capability'	Reject	This clarification is unnecessary.
224	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	Prefix with: In practice, strengthening….	Accept	Added "In practice,"
225	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	Is this study intended to be reproducible and if so, by whom?	Reject	Study periodicity is something we are recommending in the "Future work" section later in the document.
226	Robert Entriken (EPRI)	10/3/2024	13	Chapter 1	Page number '1'?	Accept	This formatting has been corrected.
227	Robert Entriken (EPRI)	10/3/2024	15	Chapter 1	May be an optimistic statement. Are all limitations known? Does combining datasets cover their individual blind spots?	Reject	The language states "helped"
228	Robert Entriken (EPRI)		16	Chapter 1	Is this benefit explained in more detail?	Accept	Changed "added" to "further" to clarify
229	Robert Entriken (EPRI)	10/3/2024	17	Chapter 1	and to map'	Accept	add the word "to"
230	Robert Entriken (EPRI)	10/3/2024	17	Chapter1	in a manner consistent with the LTRA	Accept	Switched order of "manner" and "consistent"
231	Robert Entriken (EPRI)	10/3/2024	17	Chapter 1	Are there differences between G&T or between resource mappings or something else?	Reject	Resource assumptions are provided in the appendix
232	Robert Entriken (EPRI)	10/3/2024	18	Chapter 1	No Demand Response (DR)?	Reject	Demand response assumptions are shown in a separate section
233	Robert Entriken (EPRI)	10/3/2024	18	Chapter 1	Rewrite to be more clear.	Accept	Removed "expected"
234	Robert Entriken (EPRI)	10/3/2024	19	Chapter 1	Please spell out acronyms as in Figure 1.4	Accept	These figures have been updated
235	Robert Entriken (EPRI)		19	Chapter 1	Constraints 'on' reservoir levels	Reject	This change would not improve clarity
236	Robert Entriken (EPRI)		19	Chapter 1	'No limitations on monthly or annual _energy production_'?	Accept	Changed "generation" to "energy production"
237	Robert Entriken (EPRI)	10/3/2024	19	Chapter 1	Is this the rationale for constraints only on hydro capacity and none on energy?	Reject	Yes
238	Robert Entriken (EPRI)	10/3/2024		Chapter 1	How does hydro scheduling compare with battery storage scheduling?	Reject	As described in this section, there were no energy constraints applied to hydro resources.
239	Robert Entriken (EPRI)	10/3/2024	20	Chapter 1	How does aggregation account for capacity fluctuations? Do you mean that each (type - TPR) aggregation fluctuates daily according to local drivers like weather and GADS stats?	Reject	Yes, that is the function of the time-correlated load, weather, renewable output, and outage data.
240	Robert Entriken (EPRI)	10/3/2024	20	Chapter 1	What study year?	Reject	The forced outages in Figure 1.6 were applied to the 2024 and 2033 scenarios.

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241	Robert Entriken (EPRI)	10/3/2024	21	Chapter 1	Forced outages might be more clear if you reverse the series' ordering putting it on the bottom.	Reject	Figure 1.6 shows forced outages, as the y-axis label shows. It is pretty clear where the spikes occur.
242	Robert Entriken (EPRI)	10/3/2024	21	Chapter 1	Where the same outage patterns used for both study years?	Reject	Yes, the same twelve weather years, described in Chapter 1, were applied to both the 2024 resource mix and the 2033 resource mix.
243	Robert Entriken (EPRI)	10/3/2024	21	Chapter 1	Load and generation units?	Reject	This sentence is stating that the pumped storage model is different than battery storage model
244	Robert Entriken (EPRI)	10/3/2024	21	Chapter 1	I suggest to delete 'net generation' because 'charge dynamically within the model to create hourly net generation profiles' is confusing.	Accept	Removed "net generation"
245	Robert Entriken (EPRI)	10/3/2024	22	Chapter 1	What is the lookahead period length? What are the dispatching horizon and step lengths?	Reject	The look-ahead period is one day, but not adding that level of detail to the report.
246	Robert Entriken (EPRI)	10/3/2024	22	Chapter 1	What study year?	Reject	Demand response is the same in both the 2024 and 2033. These values are shown in Figure 1.8.
247	Robert Entriken (EPRI)	10/3/2024	23	Chapter 1	Please improve the resolution of such process graphics.	Accept	This was an outcome of the pdf conversion for file size and will be improved in the future.
248	Robert Entriken (EPRI)	10/3/2024	23	Chapter 2	Does this need to be past tense? Then it switches to present tense.	Accept	Corrected.
249	Robert Entriken (EPRI)	10/3/2024	23	Chapter 2	monthly maximum availability factors	Accept	Changed capacity to availability. Further discussions will occur as part of the Canadian Analysis.
250	Robert Entriken (EPRI)	10/3/2024	24	Chapter 2	It is not yet stated that transfers are included in the hourly energy margin (see above equation). Also see above 'assessment of each TPR's load and availability of resources' implying independent TPR assessments. Please be clear about what the ITC values are in this step.	Reject	Transfers are simulated only after the hourly energy margin is calculated for each TPR. See the "Energy Transfers" section.
251	Robert Entriken (EPRI)	10/3/2024	25	Chapter 2	Do you mean 'Energy Margins were analyzed for different levels'? Instead this seems to imply that a MW value is added to each hourly load level.	Reject	This sentence is written to be generally applicable to all margin levels (tight margin level and minimum margin level) and all scenarios (3% and 6%). Subsequent paragraphs provide additional detail.
252	Robert Entriken (EPRI)	10/3/2024	26	Chapter 2	Third time this is explained in this section. Can you streamline this text?	Reject	Current language is attempting to maintain clarity.
253	Robert Entriken (EPRI)	10/3/2024	26	Chapter 2	Italics on tight margin hour	Reject	No, we don't plan to use italics for these terms
254	Robert Entriken (EPRI)	10/3/2024	27	Chapter 2	Figure number?	Accept	Figure 2.5. This has been corrected.
255	Robert Entriken (EPRI)	10/3/2024	27	Chapter 2	Repeated definition	Reject	This is the definition of "tight margin hour" - prior definition was for "tight margin"
256	Robert Entriken (EPRI)	10/3/2024	27	Chapter 2	Repeated definition	Reject	This is the definition of "resource deficiency hour" - prior definition was for "resource deficiency"
257	Robert Entriken (EPRI)	10/3/2024	28	Chapter 2	May be insufficient. One cannot prove insufficiency without all TPR import interfaces at their limits. Yes it's complicated. Consider instead using non-zero or relatively large scarcity factor differences	Reject	Insufficiency occurs if all neighboring TPRs are either 1) at their minimum margin level or 2) transfer capability is constrained. As described in Chapter 2.
258	Robert Entriken (EPRI)	10/3/2024	28	Chapter 2	Delete or change to 'maximum hourly '?	Reject	The yearly max deficiency for each of the weather years is provided in Table 2.2. The max resource deficiency in the right-hand column is the largest value of the 12 weather years.
259	Robert Entriken (EPRI)	10/3/2024	29	Chapter 2	Factor differences are more reliable than bounded flows for indicating congested hours	Reject	The difference in scarcity weighting factors was used as described in Chapter 2
260	Robert Entriken (EPRI)	10/3/2024	30	Chapter 2	Higher resolution graphics in Figure 2.7 please especially the table.	Accept	This was an outcome of the pdf conversion for file size and will be improved in the future.
261	Robert Entriken (EPRI)	10/3/2024	30	Chapter 2	Please define 'improvements'	Reject	Defined in criteria and considerations (Step 6)

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
262	Robert Entriken (EPRI)	10/3/2024	30	Chapter 2	Why is ex post finalization important?	Reject	Engineering judgment was applied as described in Step 6. Failure to do so would result in non-prudent recommendations.
263	Robert Entriken (EPRI)	10/3/2024	31	Chapter 2	An 964 MW transfer capability increase yields a 1034 MW reduction in the maximum resource deficiency.	Reject	This is an incorrect reading. The max resource deficiency dropped to 1034 MW as a result of the 964 MW transfer capability increase.
264	Robert Entriken (EPRI)	10/3/2024	31	Chapter 2	'Rightsize' is US jargon associated with layoffs.	Reject	This statement is clear in context
265	Robert Entriken (EPRI)	10/3/2024	32	Chapter 2	Is it appropriate to document this earlier?	Reject	It is not practical to document every assumption/parameter at the outset.
266	Robert Entriken (EPRI)	10/3/2024	33	Chapter 2	Were not part of the analysis or recommendations? 'were not recommended' sounds as if it was not a good idea rather than just not studied.	Accept	Removed "were not recommended"
267	Robert Entriken (EPRI)	10/3/2024	33	Chapter 2	Not clear. Where and when? Were imports to TPRs on the border of the wide-spread outage not recommended?	Accept	This bullet has been removed for greater clarity.
268	Robert Entriken (EPRI)	10/3/2024	33	Chapter 2	When should switching generators be considered? By whom?	Reject	These generators are listed in the prudent additions section as a possible offset to the recommended increases to transfer capability.
269	Robert Entriken (EPRI)	10/3/2024	33	Chapter 2	Is this used as an input to this finalization step? If so , at what point?	Reject	The 6% scenario provided an important reference but was not used for prudent addition recommendations
270	Robert Entriken (EPRI)	10/3/2024	35	Chapter 2	Suggest 'During this time period'. Using 'during this event' seems to refer to the actual event back in 2021.	Accept	Deleted the clause "during this event"
271	Robert Entriken (EPRI)	10/3/2024	36	Chapter 3	Transfer capability?	Accept	Adjusted.
272	Robert Entriken (EPRI)	10/3/2024	38	Chapter 3	11 out of 23 TPRs	Accept	This clarification has been added.
273	Robert Entriken (EPRI)	10/3/2024	38	Chapter 3	I count 12 TPRs with 0 Max Resource Deficiency.	Reject	The sentence states that 8 of the deficient TPRs (in the 2033 case) had not been deficient in the 2024 case.
274	Robert Entriken (EPRI)	10/3/2024	38	Chapter 3	Similar?	Accept	Changed similarly to similar in this instance
275	Robert Entriken (EPRI)	10/3/2024	40	Chapter 4	SPP-N at 155 MW is left out.	Reject	As described in the criteria/considerations section (Step 6), resource deficiencies <300MW were not addressed.
276	Robert Entriken (EPRI)	10/3/2024	40	Chapter 4	citation for greenlink?	Reject	We are not providing citations for each of the projects noted, but did add a paragraph and footnote recommending that readers review the full regional transmission expansion plans.
277	Robert Entriken (EPRI)	10/3/2024	41	Chapter 4	Not to be confused with the Frontier Range?	Reject	The study region is "Front Range", the generating station is "Frontier"
278	Robert Entriken (EPRI)	10/3/2024	42	Chapter 4	Citation for SERC-FL stability limits?	Reject	We are not providing citations for each of the projects noted, but did add a paragraph and footnote recommending that readers review the full regional transmission expansion plans.
279	Robert Entriken (EPRI)	10/3/2024	42	Chapter 4	instert comma	Accept	Comma inserted
280	Robert Entriken (EPRI)	10/3/2024	42	Chapter 4	Citations for Champlain Hudson Power Express and Beauharnois.	Reject	We are not providing citations for each of the projects noted, but did add a paragraph and footnote recommending that readers review the full regional transmission expansion plans.
281	Robert Entriken (EPRI)	10/3/2024	43	Chapter 4	Do 'abilities' become saturated?	Accept	Changed saturated to limited
282	Robert Entriken (EPRI)	10/3/2024	43	Chapter 4	I do not think it is the resources that become saturated. The network becomes saturated with transfer capability.	Accept	Deleted "resource" in this instance
283	Robert Entriken (EPRI)	10/3/2024	44	Chapter 4	'and from'?	Accept	Added "from"
284	Robert Entriken (EPRI)	10/3/2024	44	Chapter 4	Again confusing as to whether you are describing the simulation or actual event.	Accept	Deleted "during that event"

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285	Robert Entriken (EPRI)	10/3/2024	44	Chapter 4	Please change 'particularly during extreme events like Winter Storm Uri. During that event to particularly during extreme events. (new paragraph) During the simulated Winter Storm Uri event	Accept	Deleted "during that event"
286	Robert Entriken (EPRI)	10/3/2024	45	Chapter 4	Please reword. If TPRs have an 'abundance' of resources what is the need for transfers?	Accept	Changed "abundance" to "surplus"
287	Robert Entriken (EPRI)	10/3/2024	45	Chapter 4	generation and transmission planning that is more holistic	Accept	Removed the word "more"
288	Robert Entriken (EPRI)	10/3/2024	45	Chapter 4	'renewed load growth is expected relative to the past decade' means 'accelerating load growth'?	Accept	Changed "renewed" to "accelerated"
289	Robert Entriken (EPRI)	10/3/2024	46	Chapter 4	is expected to?	Accept	Changed "will" to "is expected to"
290	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	There is a long list of issues that may arise combined. What is the point of giving this example?	Reject	Reordered this chapter to better differentiate between "meet" and "maintain"
291	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	insert comma	Accept	Inserted comma
292	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	insert 'planned'	Reject	Outages may be planned or unplanned
293	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	adjusted?	Accept	Updated language.
294	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	'studied in this project' or 'studied by transmission planners'?	Reject	Reference is to planning studies generally.
295	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	a transfer capability?	Accept	Updated language.
296	Robert Entriken (EPRI)	10/3/2024	47	Chapter 5	Is RAS a permanent or interim solution?	Accept	Updated language.
297	Robert Entriken (EPRI)	10/3/2024	49	Chapter 6	Do you mean that each sensitivity analysis involved repeating the full 6-step prudent additions process?	Reject	Yes
298	Robert Entriken (EPRI)	10/3/2024	50	Chapter 6	Repetitive	Reject	Emphasis is okay here
299	Robert Entriken (EPRI)	10/3/2024	50	Chapter 6	Do you mean Total Prudent Additions?	Reject	This is a sensitivity scenario and does not represent a prudent additions recommendation.
300	Robert Entriken (EPRI)	10/3/2024	51	Chapter 6	Is this apparent from a simple accounting of Tier 1 net additions being negative? why not add a figure to this effect.	Accept	Added more detail to the appendix.
301	Robert Entriken (EPRI)	10/3/2024	53	Chapter 6	that	Accept	changed "which" to "that"
302	Robert Entriken (EPRI)	10/3/2024	54	Chapter 6	'not'	Accept	Corrected typo - "nor" to "not"
303	Robert Entriken (EPRI)	10/3/2024	54	Chapter 6	What is the intended purpose for providing this data? Is it sufficient for this purpose?	Accept	Added more detail to the appendix.
304	Robert Entriken (EPRI)	10/3/2024	55	Chapter 7	Are Resource Deficiency Event results intended to be provided for the Base or for Iteration 4?	Accept	Added "in the base 2033 case" to the intro to clarify
305	Robert Entriken (EPRI)	10/3/2024	55	Chapter 7	'are'	Accept	Corrected.
306	Robert Entriken (EPRI)	10/3/2024	55	Chapter 7	Why are Interchange hours blank below the Base row?	Reject	The number of interchange hours is constant
307	Robert Entriken (EPRI)	10/3/2024	55	Chapter 7	Usually a footnote asterisk is accompanied by an asterisk somewhere in the table.	Accept	Changed the asterisk to a note
308	Robert Entriken (EPRI)	10/3/2024	63	Chapter 7	Energy Adequacy has 0.0 hours. Why is there a Resource Deficiency Event? Seems to be Base result. Why are Base events significant? Why not report the Iteration 4 events? Are they not more telling about how to follow up	Accept	The events table is for the base 2033 case, not the iterations. This is far more important in articulating the risks identified. Added clarifying language to the lead-in page.
309	Robert Entriken (EPRI)	10/3/2024	64	Chapter 7	There are 2 Resource Deficiency Hours on the in the Energy Adequacy table. Why are there many more hours in the Resource Deficiency Events table?	Accept	The events table is for the base 2033 case, not the iterations. This is far more important in articulating the risks identified. Added clarifying language to the lead-in page.
310	Robert Entriken (EPRI)	10/3/2024	78	Chapter 8	How can study limitations be due to lessons learned? Instead lessons inform us about existing limitations.	Accept	added "there were" to be more grammatically correct.
311	Robert Entriken (EPRI)	10/3/2024	78	Chapter 8	'are expected to'	Accept	Changed to "are expected to"
312	Robert Entriken (EPRI)	10/3/2024	79	Chapter 8	Probabilistic metrics may allow one to report marginal contributions of G&T additions toward changing their values within the context of the given dispatch method which focus on extreme operations. Is there something more?	Reject	No change made.

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
313	Robert Entriken (EPRI)	10/3/2024	79	Chapter 8	How about updating LTRA reporting to conform more accurately with the needs of this study?	Accept	Updated language in Chapter 8 (Future Work)
314	Robert Entriken (EPRI)	10/3/2024	80	Chapter 9	Please add 'Robert Entriken' to the ITCS Advisory Group.	Accept	Added - apologies for the oversight
315	Robert Entriken (EPRI)	10/3/2024	81	Appendix A	Is this appendix only about weather-related data? Iit may be best to adjust the title accordingly.	Reject	No, it is not weather data only. This is discussing the years where correlated data was assembled.
316	Robert Entriken (EPRI)	10/3/2024	83	Appendix B	The scaling description lacks detail and is likely not reproducible and raises questions: * Is there a standard reference for this process? * Is the math of the adjustment for steps 1 and 3 (on the bottom of page 83) performed in the same way or is step 1 an additive adjustment and step 3 a multiplicative adjustment? * Is step 2 performed in the same way as the adjustment of renewable generation (rank-ordered scaling) or in some other way?	Reject	Not adding that level of detail to the report.
317	Robert Entriken (EPRI)	10/3/2024	86	Appendix C	Can this be stated more clearly? Change 'Load reflects the net energy for load which excludes BTM PV.' to 'Load reflects the net energy for load the latter of which excludes BTM PV.'	Reject	This does not seem to improve clarity.
318	Robert Entriken (EPRI)	10/3/2024	90	Appendix E	Can you please explain the reasons for the differences and what effect this may have had on the results? How about stats like percent changes?	Reject	Not adding that level of detail to the report.
319	Robert Entriken (EPRI)	10/3/2024	91	Appendix F	Is it true that accredidation factors are computed hourly for each weather year and TPR?	Reject	Yes, as described in the appendix
320	Robert Entriken (EPRI)	10/3/2024	91	Appendix F	Why discount isn't the solar profile zero at 9 PM?	Reject	In some parts of the country, depending on latitude and time zone, the sun doesn't set until ~10pm in the summer.
321	Robert Entriken (EPRI)	10/3/2024	91	Appendix F	Where can we find a definition of the Implied LTRA accreditation values?	Reject	Implied LTRA in the chart is based on peak hour only. Not adding further detail to the report.
322	Robert Entriken (EPRI)	10/3/2024	91	Appendix F	Does this example imply that the ELCC values are all 1.0?	Accept	The example has been removed for improved clarity.
323	Robert Entriken (EPRI)	10/3/2024	91	Appendix F	Are these values in megawatts?	Accept	Added "in MW" to table E.1
324	Robert Entriken (EPRI)	10/3/2024	92	Appendix F	What is a hybrid? This is the only mention of this technology.	Accept	Added parenthetical to clarify
325	Robert Entriken (EPRI)	10/3/2024	93	Appendix G	Can we have a reference for this scaling method?	Reject	There is no reference document available, but the method was discussed with NREL.
326	Robert Entriken (EPRI)	10/3/2024	94	Appendix G	Please increase resolution of this graphic.	Accept	This was an outcome of the pdf conversion for file size and will be improved in the future.
327	Robert Entriken (EPRI)	10/3/2024	94	Appendix G	Reference?	Accept	Deleted "PVWatts and"
328	Robert Entriken (EPRI)	10/3/2024	95	Appendix G	No new BTMPV?	Reject	We worked from 2023 LTRA data and are not revisiting study assumptions at this time.
329	Robert Entriken (EPRI)	10/3/2024	96	Appendix G	What does 'grossed up' mean?	Accept	Deleted "and grossed up"
330	Robert Entriken (EPRI)	10/3/2024	97	Appendix H	Sampled what values from GADS historical forced outages?	Accept	Added footnote to link to cause codes
331	Robert Entriken (EPRI)	10/3/2024	97	Appendix H	Please consider adding a figure with overlapping timelines by resource type colored by what is historical or synthetic.	Reject	Thank you for the suggestion, but we are not planning to provide that level of detail or complexity.
332	Robert Entriken (EPRI)	10/3/2024	97	Appendix H	Linked? Correlated? Function from temperature to outage rate?	Accept	Changed "linked" to "associated"
333	Robert Entriken (EPRI)	10/3/2024	100	Appendix I	have' Times of year do not see.	Accept	Changed "see" to "have"
334	Robert Entriken (EPRI)	10/3/2024	101	Appendix I	'would be sought in the prudent additions analysis'	Accept	Changed "required" to "needed"
335	Robert Entriken (EPRI)	10/3/2024	102	Appendix I	'four maps'	Accept	Changed "a map" to "four maps"
336	Robert Entriken (EPRI)	10/3/2024	102	Appendix I	Do you mean 'average daily wind plus solar capacity factor'?	Reject	These are combined for the purposes of this four-panel figure, as indicated by the "&" (and) character.
337	Robert Entriken (EPRI)	10/3/2024	106	Appendix K	held,'	Accept	Added comma
338	Robert Entriken (EPRI)	10/3/2024	106	Appendix K	Maybe also because 10% is sufficiently higher than the observed required reserves and its purpose is to trigger imports.	Reject	Thank you for the suggestion, but we are not planning to further elaborate.

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
339	Vinay Bhakkad (DTE)	10/4/2024	n/a	n/a	NERC ITCS Part 1 review and posted materials show transfer capabilities similar or comparable to MISO's latest py2024-2025 LOLE study. Moreover, exports out of MISO East into MISO Central (from MI to OH and IN) indicate ~6.3GW and MISO study indicates ~5.7GW. Also, imports from MISO Central into MISO East indicate ~4.9GW compared to MISO's study of ~4.5GW. These are for the 2024 Summer Study cases and the exports/imports are directionally matching up.	No change	No change to report requested.
340	Vinay Bhakkad (DTE)	10/4/2024	n/a	n/a	NERC study also shows a separate import/export limit with PJM, IESO and MISO North (ATC to METC via DC Tie Lines), which is also re-assuring in terms of the support we can have on an individual and cumulative basis.	No change	No change to report requested.
341	Vinay Bhakkad (DTE)	10/4/2024	n/a	n/a	It may be worthwhile adjusting the MISO North to MISO East transfers as the Mackinac HVDC guide has recommendations lower than the transfers specified in the study. Although, this will have minimal impact overall to the MI LP.	Reject	As noted in Chapter 1, we are using results from Part 1. Changes to this TTC value would have negligible impacts, but we have noted it for future studies.
342	Vinay Bhakkad (DTE)	10/4/2024	n/a	n/a	It would have been interesting to see some future year scenarios and how these limits are affected given that there is an unprecedented investment made into the Transmission Grid over the next 10 years, both within MISO and at the other ISOs.	No change	No change to report requested.
343	Vinay Bhakkad (DTE)	10/4/2024	n/a	n/a	After Part 2 and Part 3 to the study is released, we will need to review the same and provide additional feedback if necessary.	No change	No change to report requested.
344	Gabriel Adam (IESO)	10/4/2024	6	Executive Summary	Recommend providing context and critical assumptions that could influence the results before stating the additional transfer capability recommendations. They should include:	Accept	Added "at a glance" to provide this type of information.
345	Gabriel Adam (IESO)	10/4/2024	6	General Comment	the exclusive focus of this report on inter-regional transfer capability solutions as required by the legislation;	Accept	Added "at a glance" to provide this type of information.
346	Gabriel Adam (IESO)	10/4/2024	6	General Comment	the fact the reliability can be achieved through other means and that prudent planning includes evaluation and optimization of multiple solutions. including generation additions and demand management.	Accept	Added "at a glance" to provide this type of information.
347	Gabriel Adam (IESO)	10/4/2024	6	General Comment	the sensitivity of the results to the most critical assumptions (e.g. future resource, assumptions future transmission, future weather patterns)	Accept	Added border to prudent additions picture
348	Gabriel Adam (IESO)	10/4/2024	6	General Comment	other considerations – I tried to flag them throughout the report.	No change	See other comments
349	Gabriel Adam (IESO)	10/4/2024	6	Executive Summary - Key Observations	"Required" may be too strong in this context.	Accept	Changed "required" to "needed"
350	Gabriel Adam (IESO)	10/4/2024	7	Executive Summary	Reliability only through a transfer capability solution - it should be specified.	Accept	Added "at a glance" to provide this type of information.
351	Gabriel Adam (IESO)	10/4/2024	8	Executive Summary	recommend mentioning: reliability only through transfer capability solutions.	Accept	Added "at a glance" to provide this type of information. Also made edits elsewhere in the exec summary, etc.
352	Gabriel Adam (IESO)	10/4/2024	11	Executive Summary	recommend mentioning: reliability only through transfer capability solutions.	Accept	Added "at a glance" to provide this type of information. Also made edits elsewhere in the exec summary, etc.
353	Gabriel Adam (IESO)	10/4/2024	11	Impact of Resource Assumptions on Prudent Addition Reccomendations	This dependency between future resource assumptions and results is critical and should be stated in the considerations/context in the executive summary before the recommendations are presented.	Accept	Adding border to prudent additions picture
354	Gabriel Adam (IESO)	10/4/2024	12	Reccomendations to Achieve Transfer Capability (Part 3)	I'd suggest using the term "high-level recommendations" throughout the report when referring to recommended transfer additions. It could help mitigate the risk that a casual reader would take the results/recommendations out of context.	Accept	Noted as high-level in multiple places.
355	Gabriel Adam (IESO)	10/4/2024	12	Reccomendations to Achieve Transfer Capability (Part 3)	"must" is a strong word in this context.	Accept	Adjusted language.

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356	Gabriel Adam (IESO)	10/4/2024	12	Reccomendations to Achieve Transfer Capability (Part 3)	I recommend bringing this statement upfront in a considerations/context section before making the recommendations in the executive summary because it is important to the context.	Accept	Added "at a glance" to provide this type of information.
357	Gabriel Adam (IESO)	10/4/2024	13	Chapter 1	please qualify this [neighboring TPRs… in item #4] by adding: "given the specified set of assumptions".	Reject	This list is a set of tasks - assumptions and other study parameters are documented elsewhere in the report.
358	Gabriel Adam (IESO)	10/4/2024	13	Chapter 1	this [relative merits of additional transfer capability] is critical to setting the study context - I suggest adding it to the start of the executive summary before recommendations.	Accept	Added "at a glance" to provide this type of information.
359	Gabriel Adam (IESO)	10/4/2024	15	Chapter 1	Please explain how these potential new interfaces were selected and how they were used in the study if at all (it says "not specifically evaluated").	Accept	Deleted sentence.
360	Gabriel Adam (IESO)	10/4/2024	18	Chapter 1	having LTRA's definitions for each tier would be helpful.	Accept	Updated footnote with brief description of Tiers and kept link for more information
361	Gabriel Adam (IESO)	10/4/2024	18	Chapter 1	I'd suggest adding a recommendation in the report to help with consistency in the definition/interpretation of each tier.	Accept	Added sentence to this effect in the "Future Work" section.
362	Gabriel Adam (IESO)	10/4/2024	18	Chapter 1	if NERC believes this [replace retirements scenario] is an important/credible scenario should this be added to the LTRA scenarios?	Accept	Added LTRA integration in the "Future Work" section
363	Gabriel Adam (IESO)	10/4/2024	33	Chapter 2	This definition of "prudent" seems important and offers context for recommendations. I'd suggest adding it to the set of critical considerations/context in the executive summary before the recommendations are stated.	Accept	Stronger language has been added to the executive summary.
364	Gabriel Adam (IESO)	10/4/2024	39	Chapter 3	given that the hours seem to be low in certain scenarios I am wondering if a discussion about the duration of the deficiencies and possible more effective solutions (e.g. demand management) is warranted.	Reject	These criteria were reviewed by the ITCS AG
365	Gabriel Adam (IESO)	10/4/2024	45	Chapter 4	Wider area planning approach is a good idea. That reminds me that NPCC jurisdictions conduct seasonal and annual wider area probabilistic assessments that take into but could easily become part of the resource-transmission optimization exercise. account the ability to support each other from an energy adequacy view point; transmission transfers are inputs into the studies	No change	No change to report requested.
366	Gabriel Adam (IESO)	10/4/2024	46	Chapter 5	This is an important consideration. I'd suggest adding it to the executive summary.	Reject	Yes, it is an important consideration but not everything can be in the executive summary.
367	Gabriel Adam (IESO)	10/4/2024	46	Chapter 5	Another important consideration that should be reflected in the executive summary.	Accept	Added "at a glance" to provide this type of information.
368	Gabriel Adam (IESO)	10/4/2024	46	Chapter 5	Is "location" the right term when in fact the report doesn't identify specific locations where the reinforcements to enhance transfers are needed (some are on the inter-ties and some are internal)?	Accept	Adjusted language.
369	Gabriel Adam (IESO)	10/4/2024	46	Chapter 5	Another important consideration. Please add it to the executive summary.	Accept	Added "at a glance" to provide this type of information.
370	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	No mention is made towards the NERC energy security standards in planning and operations that are currently being developed to adddress the fact that "recent operational events show that more needs to be done to support energy adequacy to continuously meet customer demand."	Accept	Added language.

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
371	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	NERC states that "Ensuring suffient transfer capability of the transmission system to support energy adequacy is the reliability risk that the ITCS seeks to identify and address." This language isn't found in the fiscal responsibility action of 2023. Rather, this report should be a study of total transfer capability between transmisison planning regions that addresses: (i) current total transfer capability beween each pair of neighboring transmission planning regions, (ii) a recommendaation of prudent additons to total transfer capability between each pair of neighboring transmission planning regions that would demonstrably strengthn reliability within and among such neighboring transmission planning regions, and (iii) recommendations to meet and maintain total transfer capability together with such recommende dprudent additions to total transfer capabiltiy between each pair of neighboring transmisison planning regions. As such, the executive summary should not include the statement, "Ensuring sufficient transfer cpaability of the transmission system to support energy adeqaucy is the reliability risk that the ITCS seeks to identify and address. Particulary the ITCS at most can only identify the risk, it cannot address it. The effort needed to address the risk is beyond the scope of ITCS.	Accept	Reworded sentence to clarify.
372	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	The report should identify the source of the FERC definition of prudent.	Accept	Moved FERC call-out to footnote, included citation, and updated call-out box
373	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	What is the difference between a "technically prudent addition" and "prudent addition"? Recommendations for prudent additions should also consider the amount of local generation (LBW, OSW, UPV, batteries, etc.) that could alternatively be build to address the observed deficiency prior to identifying a prudent transmisison addition.	Accept	The ITCS definition of prudent has been added. Technically is inserted at first usage to differentiate from economically prudent. The option to build local resources (or demand response) is articulated in multiple places.
374	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	Are the draft standards under development also stating that energy adequacy is the ability of the BPS to meet customer demand at all times (*see* Project 2022-03 and 2024-02)? I don't think that these projects have yet defined the energy adequacy metrics for which corrective action plans are required. This has the potential to create conflict betwen the ITCS findings for "prudent additions" which is a limited # of hours of a given weather year to what may be developed for the energy adequacy criteria.	Reject	We are not linking to any reliability standards that are in the development process.
375	Keith Burrell (NYISO)	10/7/2024	vi	executive summary, Study progress, last sentence	missing the word interregional. "The fundamental question assessedy by the ITCS is the abiltiy of the BPS to support these *interregional* transfers when needed for energy adequacy."	Accept	Inserted
376	Keith Burrell (NYISO)	10/7/2024		Everywhere	The term energy adequacy shows up everywhere and there currently is no established energy adequacy criteria. At best this report can only identify the risk.	Reject	Please see the criteria/considerations section in Chapter 2
377	Keith Burrell (NYISO)	10/7/2024	vi	executive summary, prudent additons to transfer capability	Missing various caviats such as the study does not consider planning entities procedures for conducting transfer limits, how weather impacts ratings, EOPs, etc.	Accept	Added "at a glance" to provide this type of information.
378	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	Why are the column lables in Table ES.1 different than the column lables in Table 3.4?	Accept	This was an intentional decision to highlight to make the executive summary more accessible as the weather years had not been explained (until chapter 1). However, a footnote has been added to provide this information.

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#	Submitter	Date	Page #	Report Section	Comment Summary	Disposition	Disposition Comment
379	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	The metric for a prudent addition seems to be a single hour of deficincy by some MW number. However, this is not clearly stated nor justified as an appropriate metric for this assessment. The justification for the metric should include considerations of existing NERC reliability criteria as well as established criteria, as applicable, by regional entities.	Accept	This is articulated in detail in Chapter 2. Also we have called out more clearly the study's definition of prudent in the exec summary.
380	Keith Burrell (NYISO)	10/7/2024	xii	executive summary	says that ITCS established the future resource mix. ITCS is the report. The future resource mix was established by NERC's consultant.	Reject	The 2033 resource mix selected followed multiple discussions of options at the ITCS Advisory Group.
381	Keith Burrell (NYISO)	10/7/2024	xii	executive summary	The recommendations to achieve transfer capability needs to acknowledge that increased transfer capability does not reduce the need for planning entities to develop their plans such that they are self sufficient (in consideration of EOPs, capacity requirements, etc.) and increased transmisison with neighbors does not change this. For instance, if there is increased transmission capability with neighbors should this change the ERAG MMWG schedule for power flow cases or the assumed emergency support from neighbors in resource adequacy? Probably not.	Reject	References to industry plans are noted in several places in the report.
382	Keith Burrell (NYISO)	10/7/2024	13	Chapter 1	Please add discussion to describe the treatment of HVDC resources in part 1 and part 2 analysis.	Reject	Treatment of dc-only interfaces was no different - all interfaces used the TTC values calculated in Part 1
383	Keith Burrell (NYISO)	10/7/2024	16	Chapter 1	The appraoches for using weather should acknowledge that there are potential differences in appraoches compared to planning entities that were not considered for this assessment.	Reject	Discussed with the ITCS Advisory Group. No alternative approaches were provided.
384	Keith Burrell (NYISO)	10/7/2024	18	Chapter 1	Do retirements only consider those reported in the LTRA or is there some other retirement assumption?	No change	Reported retirements in the 2023 LTRA.
385	Keith Burrell (NYISO)	10/7/2024	24	Chapter 2	Need to caviat these results to say that firm contracts of resources were ignored.	Reject	The treatment of firm contracts was a discussion at multiple Advisory Group meetings. In Part 2, energy was permitted to flow up to the transfer capability limit if there was sufficient energy in the sending TPR, so there was no distinction between firm and non-firm energy.
386	Keith Burrell (NYISO)	10/7/2024		nowhere	Its important to recognize in the report somewhere that there currently is no established criteria to plan for extreme weather and to acknowldege NERC's efforts for the establishment of reliabiltiy criteria to address this issue.	Accept	Added language.
387	Keith Burrell (NYISO)	10/7/2024	21	Chapter 1	Why is an ERCOT mandate included but other proposed plans in other areas neglicted in the report?	Reject	Special consideration given the enforceable mandate discussed with the ITCS Advisory Group and noted in the report. Please note that the PAR settings on the PJM-NYISO interface were a special consideration in light of the approved operating agreement as described in the Part 1 report.
388	Keith Burrell (NYISO)	10/7/2024	21	Chapter 1	Please site the basis for the assumed round-trip efficiency losses for storage.	Reject	Not providing that level of detail in the report
389	Keith Burrell (NYISO)	10/7/2024	22	Chapter 1	While the study considered demand response, why are other steps in emergency operating procedures not considered?	Reject	The study team sought consistency in this continent-wide study, and operating procedures vary considerably across regions.
390	Keith Burrell (NYISO)	10/7/2024	14	Chapter 1	Need to caviat the transmission limitation results to be clear that these results did not include considerations given by planning entinties for the establishment of their interregional transfer limits.	Reject	Planning entities have been engaged throughout the study, including establishment of Part 1 parameters, cases, and results. Particular and well-coordinated attention was given to the New York-PJM interfaces as described in the Part 1 report.
391	Keith Burrell (NYISO)	10/7/2024	29	Chapter 2	How are HVDC resources considered in step 3?	Reject	Treatment of dc-only interfaces was no different - all interfaces used the TTC values calculated in Part 1

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392	Keith Burrell (NYISO)	10/7/2024	30	Chapter 2	Step 4 needs to include more details as to why/how the generaiton mix changes as you add transmission in 33% chunks. For instance, is this really all a reallocation of battery performance?	Reject	The generation mix does not change from iteration to iteration. However, the dispatch of the generation, especially energy-limited resources, may change as transfer capability is added. Battery storage is just one of the energy-limited resources.
393	Keith Burrell (NYISO)	10/7/2024		Overall	NERC should justify why a prudent addition is needed to resolve deficiencies observed for some diminimus set of hours	Reject	The criteria and considerations were reviewed by the ITCS Advisory Group.
394	Keith Burrell (NYISO)	10/7/2024	vi	executive summary	the last setence of the first paragraph states that ITCS is seek ot address energy adequacy. ITCS can identify the risks, but it cannot address these risks.	Accept	Updated language.
395	Dave Angell	10/8/2024	vi	A Complex and Evolving Grid	Why is the "A Complex and Evolving Grid" section different from Part 1? I have a concern with the following "With resources historically located near load centers, the transmission system was originally designed for limited mutual support;" This might describe the eastern system more than the western system. The Pacific NW system was built with long transmission lines for transmitting from remote resources and has relied on mutual support for years, e.g. the Reserve Sharing Group.	Accept	Softened to "most" to make the sentence more generic.
396	Dave Angell	10/8/2024	vi	Study Need	"carefully planned resource mix" -- carefully should be replaced with thoughtfully or other term to capture the increased planning difficulty of replacing fossil fueled base load resources with variable resources and storage.	Accept	Changed to thoughtfully or deleted the adverb
397	Dave Angell	10/8/2024	vii	Study Need	"the ITCS is now making recommendations" the ITCS is the study - NERC is making the recommendation	Reject	The ITCS project is a large collaborative endeavor far beyond NERC and the broader ERO enterprise. Confirmed by comms.
398	Dave Angell	10/8/2024	viii	Recommendations for Prudent Additions	"Q1" should be replaced with quarter 1 and "	Accept	Updated sentence
399	Dave Angell	10/8/2024	viii	Prudent Additions to Transfer Capability	ITCS evaluated the energy adequacy of the BPS assuming past weather conditions occur again in 2033. Assuming... should be replaced with modelling past weather conditions in 2033.	Accept	Updated sentence
400	Dave Angell	10/8/2024	ix	Table ES.1	WY is the acronym for Wyoming. Year is typically abreviated to Yr yielding Wyr	Reject	Acronym is spelled out in the report and it is unlikely a reader would confuse this with the state of Wyoming.
401	Dave Angell	10/8/2024	xii	Recommendations to Achieve Transfer Capability	"Where carefully planned" - strike carefully here.	Accept	Changed to thoughtfully or deleted the adverb
402	Dave Angell	10/8/2024	xii	Stakeholder Engagement During the ITCS	The ITCS marks the beginning of a long process - Replace "long process" with transmission line development process	Reject	This sentence refers to the entire process after the FERC filing.
403	Dave Angell	10/8/2024	xiii	Project Scope	bullet 1 wind and solar need furter definition - is it wind speed, solar irradiance, or generation output for both	Accept	Updated sentence to reflect generation output
404	Dave Angell	10/8/2024	17	Resource Mix	Teir 1 and Tier 2 resources should be defined in the report rather than referring the read to the NERC LTRA page. The definition of Tier 1 is short and I did not find the definition of Tier 2.	Accept	Updated footnote with brief description of Tiers and kept link for more information
405	Dave Angell	10/8/2024	27	Metrics	Point 2 - should be changed to … is unable to rise be lifted out of the tight margin region	Reject	This does not seem to improve clarity and is grammatically incorrect.
406	Dave Angell	10/8/2024	40	Northern California	The Greenlink Project is entirely in Nevada and does not have a connection to Northern California. The existing interface between Nevada and Northern California is comprised of low voltage transmission with very little capacity. I do not see how it could increase the transfer capability to Northern California.	Reject	Confirmed with WECC

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407	Dave Angell	10/8/2024	58	Southern California	Should add a note that this TPR has results that demonstrate that more work is needed. The simulation should not allow a TPR to have increasing deficiencies with additional iterations.	Accept	This table has been adjusted.
408	Colton Pankhurst (NR Canada)	10/17/2024		Figure ES.2	Not all of the “Potential new interfaces” in Figure 1.2 are captured. For example, the line between Sask Power to Wasatch Front and the line from IESO to PJM-E. I realize that both of these new interfaces are not flagged for prudent additions, but for clarity/consistency it might be beneficial to ensure they are captured within Figure ES.2 and noted as 0 MW of prudent additions recommended.	Accept	Updated lead-in sentence and footnoted, but intentionally did not include these in the figure to avoid confusion.