The Disturbance Monitoring SAR drafting team thanks all those who submitted comments on Draft 1 of the Disturbance Monitoring SAR. This SAR was posted for a 30-day public comment period from March 22 through April 20, 2007. The requester asked stakeholders to provide feedback on the SAR through a special SAR Comment Form. There were 18 sets of comments submitted, including comments from 75 different people from more than 50 organizations representing 8 of the 10 Industry Segments as shown in the table on the following pages.

Based on the comments received, the SAR drafting team recommends that the Standards Committee accept the revised SAR for Project 2007-11 Disturbance Monitoring for revision of standards:

PRC-002 — Define and Document Disturbance Monitoring Equipment Requirements PRC-018 — Disturbance Monitoring Equipment Installation and Data

In response to the comments received, the SAR drafting team has revised the SAR for Project 2007-11 Disturbance Monitoring to add clarification as suggested:

- 1. The box for item 5 on the Applicable Reliability Principle table of the SAR ("Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems") has been checked.
- 2. The box for item 7 on the Applicable Reliability Principle table of the SAR ("The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis") has been checked.
- 3. The last paragraph of the Brief Description of the SAR was modified to begin with "When revising PRC-002 and PRC-018 the SDT will".
- 4. The following sentence was added to the end of the Brief Description of the SAR: "Note: Phasor measurement networks are to be addressed by Project 2008-06."

In addition, the SAR drafting team noted one comment outside the scope of responsibility of the SAR drafting team to resolve. This particular comment has been noted and added as Attachment 2 to the SAR for resolution during standard drafting.

In this "Consideration of Comments" document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the standards can be viewed in their original format at:

http://www.nerc.com/~filez/standards/Disturbance_Monitoring_Project_2007-11.html

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

¹ The appeals process is in the Reliability Standards Development Procedures: <u>http://www.nerc.com/standards/newstandardsprocess.html</u>.

The Industry Segments are:

- 1 Transmission Owners
- 2 RTOS, ISOS
- 3 Load-serving Entities
- 4 Transmission-dependent Utilities
- 5 Electric Generators
- 6 Electricity Brokers, Aggregators, and Marketers
- 7 Large Electricity End Users
- 8 Small Electricity End Users
- 9 Federal, State, Provincial Regulatory or other Government Entities
- 10 Regional Reliability Organizations, Regional Entities

	Commenter	Organization				Indu	ustry	Segi	ment			
			1	2	3	4	5	6	7	8	9	10
1.	Anita Lee (G2)	AESO		✓								
2.	Darren McCrank (G7)	AESO		~								
3.	John Kehler (G7)	AESO		~								
4.	Larry Smith (G1)	Alabama Power Company			~							
5.	Ken Goldsmith (G5)	ALT	✓				~					
6.	Doug Selin (G7)	Arizona Public Service Co.	~		~							
7.	Harry Lee (G7)	BC Hydro and Power Authority			~		~					
8.	Mike Kwok (G7)	BCTC		~								
9.	Dave Rudolph (G5)	BEPC	✓		✓		~	✓				
10.	James Burns (G7)	BPA	~		✓		~	✓				
11.	Ken Martin (G7)	BPA	~		✓		✓	✓				
12.	Brent Kingsford (G2)	CAISO		~								
13.	Paqtrick Truong (G7)	CAISO		~								
14.	Ed Thompson (G4)	ConEd	~		✓			✓				
15.	Michael Gildea (G4)	Constellation			✓		✓	✓				
16.	Thomas Owens	Dominion Virginia Power	~		~		~	~				
17.	Dave Powell	ED Planning and Protection										
18.	Ed Davis	Entergy Services	✓		✓		✓	~				
19.	Steve Myers (I) (G2)	ERCOT		~								
20.	Dave Folk	FirstEnergy	✓		✓		✓	✓				
21.	Dick Pursley (G5)	GRE	✓		✓		✓					
22.	David Kiguel (G4)	Hydro One Networks	✓		✓							

	Commenter	Organization				Indu	ustry	Segi	ment	:		
			1	2	3	4	5	6	7	8	9	10
23.	Roger Champagne (I) (G4)	Hydro-Québec TransÉnergie	~									
24.	Ron Falsetti (I) (G2) (G4)	IESO		~								
25.	Matt Goldberg (G2)	ISO-NE		~								
26.	Kathleen Goodman (I) (G4)	ISO-NE		~								
27.	William Shemley (G4)	ISO-NE		√								
28.	Brian Thumm	ITC Transco	✓									
29.	Jim Cyrulewski (G3)	JDRJC Associates								✓		
30.	Mike Gammon	KCP&L	✓		✓		✓	✓				
31.	Donald Nelson (G4)	MA Dept. of Tel. and Energy									~	
32.	Robert Coish (I) (G5)	Manitoba Hydro	~		~		~	~				
33.	Terry Bilke (I) (G3) (G5)	MISO		~								
34.	Carol Gerou (G5)	MP	~		✓		~	~				
35.	Rick Liljegren (G5)	MP	~		~		✓	~				
36.	Larry Brusseau (G5)	MRO										✓
37.	Michael Brytowski (G5)	MRO										~
38.	Randy Macdonald (G4)	NBSO		~								
39.	Herb Schrayshuen (G4)	NGRID	~									
40.	Michael Ranalli(G4)	NGRID	~									
41.	Michael Schiavone (G4)	NGRID	~									
42.	Rikin Shah (G7)	Northwestern Energy	✓									
43.	Guy V. Zito (G4)	NPCC										✓
44.	Al Boesch (G5)	NPPC										~
45.	Murale Gopinathan (G4)	NU	~									
46.	Mike Calimano (I) (G2)	NYISO		~								
47.	Greg Campoli (G4)	NYISO		✓								
48.	Al Adamson (G4)	NYSRC	~									
49.	Todd Gosnell (G5)	OPPD	✓		✓			~				
50.	Bill Miller (G7)	Pacific Gas & Electric Co.	~		~		~					
51.	Fred Henderson	Pacific Gas & Electric	✓		✓		✓					

	Commenter	Organization	ization Industry Segment									
			1	2	3	4	5	6	7	8	9	10
	(G7)	Co.										
52.	Fabio Rodriguez (G7)	PacifiCorp	~				~					
53.	Alicia Daugherty (G2)	PJM		~								
54.	Abraham Ellis (G7)	PSC of New Mexico									✓	
55.	Phil Riley (G6)	PSC of South Carolina									~	
56.	Mignon L. Clyburn (G6)	PSC of South Carolina									~	
57.	Elizabeth B. Fleming (G6)	PSC of South Carolina									~	
58.	G. O'Neal Hamilton (G6)	PSC of South Carolina									~	
59.	John e. Howard (G6)	PSC of South Carolina									~	
60.	Randy Mitchell (G6)	PSC of South Carolina									✓	
61.	C. Robert Moseley (G6)	PSC of South Carolina									~	
62.	David A. Wright (G6)	PSC of South Carolina									~	
63.	William Mittelstadt (G7)	Retired	~									
64.	John Hauer (G7)	Retired										
65.	William Phillips (G2)	RFC, MRO, SERC		✓								
66.	Bharat Bhargava (G7)	SCE	~				~					
67.	Roman Carter (G1)	Southern Company Transmission	~				~	~				
68.	Marc Butts (G1)	Southern Company Transmission	~				~	~				
69.	J.T. Wood (G1)	Southern Company Transmission	~				~	~				
70.	Jim Busbin (G1)	Southern Company Transmission	~				~	~				
71.	Charles Yeung (G2)	SPP										✓
72.	John Hernandex (G7)	SRP	~		~		~	~				
73.	Peter Mackin (G7)	Utility System Efficiencies, Inc.								~		
74.	James Haigh (G5)	WAPA	✓					✓				
75.	Dan Hamai (G7)	WAPA	✓					✓				
76.	Donald Davies (G7)	WECC										✓
77.	Neal Balu (G5)	WPSR										~
78.	Pam Oreschnik (G5)	XCEL	~		✓		✓	~				

	Commenter	Organization	Industry Segment									
			1	2	3	4	5	6	7	8	9	10
79.	David Lemmons (G3)	Xcel Energy	~		~		~	~				

I - Indicates that individual comments were submitted in addition to comments submitted as part of a group

G1 – Southern Company Transmission G2 – IRC Standards Review Committee

G3 – Midwest Standards Collaboration Group

G4 – NPCC CP9 Reliability Standards Working Group

G5 – MRO Members

G6 – Public Service Commission of South Carolina

G7 – WECC Disturbance Monitoring Working Group

Index to Questions, Comments, and Responses

- 4. Please provide any other comments (that you have not already provided in response to the first three questions on this form) that you have on the revised SAR......14

1. Do you believe that there is a reliability-related need to address revisions to PRC-002 and PRC-018 — disturbance equipment installation, monitoring, and reporting so that both standards are enforceable and complement one another? If "No," please explain.

Summary Consideration: Almost all commenters indicated they do think there is a reliability-related need to revise PRC-002 and PRC-018. One commenter suggested that Reliability Principle #5 applies to these two standards and the drafting team revised the SAR to include that principle:

 Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.

Question #1								
Commenter	Yes	No	Comment					
Entergy Services		Ŋ	We do not think there is a reliability-related need to revise PRC-002 and PRC-018. However, we do agree that it will be a worthwhile effort to revise the two standards to make them: enforceable by FERC, more compatable with each other, and to address FERC staff and FERC comments.					
Response:								
Thank you for the com PRC-018.	iment.	The S/	AR drafting team will proceed with our recommendation for the revision of PRC-002 and					
Midwest SCG	\checkmark	While the information provided by DME provides value and contributes to reliability						
Image: Compliance is an issue the SAR drafting team cannot respond to; however, the standard drafting team for Project 2007-11 will be required to propose the compliance elements of these standards and Midwest SCG can comment on the compliance elements when the standards are posted for public comment.								
KCP&L			PRC-002: Part of the concern stated in the SAR is the development of criteria for the need for DME, criteria for the placement of DME, criteria for DME monitoring and data capture & retention, and other criteria for data reporting and program review is too open and needs to be tightened. This standard is targeted at a regional level and is an appropriate designation as different regions may have different DME needs. As an example, dense transmission systems with shorter transmission facilities and tight interconnections will have different dynamic characteristics of interest than transmission					

Question #1 Commenter	Yes	No	Comment
Commenter Response:	Yes	No	Systems that are much less dense with longer transmission facilities and not as many interconnections. It is appropriate for members of regional operations to work with their regions to establish and document their DME individual regional needs. I am concerned regarding the statement that the standard as written needs to be further defined to eliminate the "fill in the blank" perception. Responding yes, as long this standard does not get so prescriptive that it stifles the ability of the regional entities to develop DME criteria that fits their regional configurations and system characteristics.
2007-11 an over-arc regional standards. Y are posted for public	hing cor 'ou will ł comme ifles the	ntinent nave th nt. You ability	ard which is being revised as directed by FERC. It is anticipated that as part of this Project -wide PRC-002 standard will be developed and coordinated with the development of eight ne opportunity to comment on the continent-wide and related regional standards as they a can then comment on the individual standards and to the extent that you feel either is so of the regional entities to develop DME criteria that fit their regional configurations and nment accordingly.
Manitoba Hydro	V		It seems that Applicable Reliability Principle number 5, Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems, should also be checked as disturbance monitoring is an important system monitoring function in addition to real-time monitoring.
Response: The SAR drafting tea table of the SAR. Southern Company Transmission	m agree	es with	your comment and has checked the box for item 5 on the Applicable Reliability Principle
FirstEnergy	$\mathbf{\nabla}$		
Hydro-Québec TransÉnergie	V		
Dominion VA Power	V		
ERCOT	$\mathbf{\nabla}$		
IESO	\checkmark		
IRC SRC	\checkmark		

Question #1			
Commenter	Yes	No	Comment
ISO-NE	$\mathbf{\nabla}$		
ITC Transco	$\mathbf{\nabla}$		
NPCC CP9 RSWG	V		
NYISO	V		
PSC of South Carolina			
WECC DMWG	\mathbf{V}		

2. Do you agree with the scope of the proposed project (the scope includes all the items noted in the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)? If "No," please explain.

Summary Consideration: Almost all commenters indicated agreement with the scope of the proposed SAR. One commenter indicated that the SAR should be revised to require the SDT to revise and address current regional programs developed in accordance with PRC-018, and the drafting team modified the SAR in support of the intent of this comment.

Question #2			
Commenter	Yes	No	Comment
FirstEnergy			RFC is in the process of developing a Disturbance Monitoring Equipment standard based on NERC standards PRC-002 and PRC-018. The SAR requires the SDT to review PRC- 002 and each of the current regional programs developed in accordance to that standard. The SAR should be revised to require the SDT to review and address the current regional programs developed in accordance to PRC-018.
Response:			
The SAR drafting Tean and PRC-018 the SDT			e last paragraph of the Brief Description of the SAR to begin with "When revising PRC-002
Midwest SCG	\checkmark		Assuming that this is handled as a technical standard.
Response: The standards process	requir	es that	all standards be addressed through the same puplic posting and commenting process.
NYISO			We agree with the project scope as described in the SAR, however please see response to question 4 below.
Response:			
Please see the response	se to th	ne com	ments on question 4.
Southern Company Transmission	$\mathbf{\nabla}$		
Entergy Services	\checkmark		
Hydro-Québec TransÉnergie	$\mathbf{\nabla}$		
Dominion VA Power	$\mathbf{\nabla}$		
ERCOT	\checkmark		

Question #2			
Commenter	Yes	No	Comment
IESO	\checkmark		
IRC SRC	$\mathbf{\nabla}$		
ISO-NE	$\mathbf{\nabla}$		
ITC Transco	$\mathbf{\nabla}$		
KCP&L	\mathbf{V}		
Manitoba Hydro	$\mathbf{\nabla}$		
NPCC CP9 RSWG	$\mathbf{\nabla}$		
PSC of South Carolina	$\mathbf{\nabla}$		
WECC DMWG	\mathbf{V}		

3. Are there additional revisions beyond those identified in the SAR that should be addressed within the scope of this Project 2007-11? If "No," please explain.

Summary Consideration: There was an error on the comment form, and the statement that asked, 'If 'No' please explain – should have asked, 'If 'Yes' please explain. Stakeholders did not provide a list of additional revisions for inclusion in the scope of this project.

Question #3								
Commenter	Yes	No	Comment					
Dominion VA Power		\mathbf{N}	There are specific changes needed, but the general SAR process steps listed should identify needed changes. Details can be worked out during drafting of changes.					
Response:								
Thank you for your comment. The SAR drafting team encourages your review and comment on the standard itself when it is posted for comment.								
Southern Company Transmission		$\mathbf{\nabla}$	The question should say if commenter said "yes", provide supporting information.					
Response:								
The SAR drafting team	n agree	s with	your comment.					
FirstEnergy		\mathbf{N}	It appears this question is worded incorrectly such that it requires an explanation for a "Yes" response rather than an explanation for a "No" response.					
Response:								
The SAR drafting team	n agree	s with	your comment.					
Manitoba Hydro		\checkmark	Comments need to be provided for a "Yes" response.					
Response:		1						
The SAR drafting team agrees with your comment.								
Midwest SCG		V	It would appear that a Yes answer would need to provide supporting information. There appears to be haste in assembling this comment form.					
Response:		•						

Question #3	Question #3								
Commenter	Yes	No	Comment						
The SAR drafting tean	n agree	s that	a "Yes" answer would need to provide supporting information.						
Entergy Services		$\mathbf{\nabla}$							
Hydro-Québec TransÉnergie		V							
ERCOT		V							
IESO		$\overline{\mathbf{A}}$							
IRC SRC		$\overline{\mathbf{A}}$							
ISO-NE		\mathbf{V}							
ITC Transco		$\overline{\mathbf{A}}$							
KCP&L		$\overline{\mathbf{A}}$							
NPCC CP9 RSWG		V							
NYISO		$\mathbf{\nabla}$							
PSC of South Carolina		V							
WECC DMWG		$\overline{\mathbf{A}}$							

4. Please provide any other comments (that you have not already provided in response to the first three questions on this form) that you have on the revised SAR.

Summary Consideration: Almost all commenters indicated they do think there is a reliability-related need to revise PRC-002 and PRC-018.

- One commenter suggested that Reliability Principle #5 and Reliability Principle #7 apply to these two standards and the drafting team revised the SAR to include these principles:
 - 5. Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.
 - 7. The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a widearea basis.
- One commenter suggested clarifying that Phasor Measurement Networks are outside the scope of this SAR and the drafting team modified the SAR to include a phrase indicating that Phasor Measurement Networks will be addressed in Project 2008-06.
- One set of commenters suggested industry discussion on some of the technical details within the scope of the standards addressed by this SAR and the drafting team added this list of issues to the SAR as topics to be addressed by the standard drafting team.

Question #4	
Commenter	Comment
FirstEnergy	Please revise the Brief Description to include any special conside The SAR drafting team added the following clarifying sentence to the Brief Description of the SAR:
	"Phasor measurement networks are to be addressed by Project 2008-06." rations for PRC-018 similar to the special considerations for PRC-002. Perhaps the last paragraph is applicable to both PRC-002 and PRC-018 standards but it is not clear. For the Applicable Reliability Principles Table on page 4, boxes 5 and 7 should also be checked since they refer to system monitoring.
Response:	
	Im modified the last paragraph of the Brief Description of the SAR to begin with "When revising PRC-002 F will". In addition, Boxes 5 and 7 have been checked on the Applicable Reliability Principle table of
MRO Members	This proposed standard (SAR) could be considered a technical standard that measures something or

Question #4		
Commenter	Comment	
	provides information to the reliability processes. Failure to meet this standard would not have an immediate effect on reliability. Therefore, the violation risk factors, mitigation time horizon, and violation severity levels should not be as severe as a performance standard. While the standard provides criteria for disturbance monitoring equipment and for collection of data, failure to fully meet these criteria at all times is not a serious reliability concern.	
Response:		
will be required to pro	e the SAR drafting team cannot respond to; however, the standard drafting team for Project 2007-11 pose the compliance elements of these standards and MRO Members can comment on the compliance andards are posted for public comment.	
NYISO	Interconnected Phasor Measurement Unit (PMU) networks such as North American SynchoPhasor Initiative (NASPI) are not now covered in PRC-002 and PRC-18. We believe this SAR should be revised to indicate that standards relating to such PMU networks are not to be added in these revisions. We believe there should be a separate standard addressing PMU networks. Our reasons for this position are 1) There is enough for 2007-11 to deal with as it is. 2) Composition of the drafting teams for these two efforts should be different. As already indicated in the NERC Glossary definition of Disturbance Monitoring Equipment (DME), equipment that meets the functional requirements of DME may be identified as a PMU, and any DME may certainly have a PMU output, but PMU network related standards should be addressed in a separate standards document.	
Response:		
Ŭ	n added the following clarifying sentence to the Brief Description of the SAR:	
"Phasor measurement	networks are to be addressed by Project 2008-06."	
IRC SRC	The SDT should pose questions regarding: (1a) whether or not NERC should require data recording performance requirements that can only be met by purchasing specific assets	
	(1b) if it is sufficient to mandate what information and performance is required rather than the hardware itself (it should accomplish the same results but would avoid the issue of asset purchasing)	
	(1c) should assets per se be handled by the certification / recertification process - if the entity does not have the equipment, then it can not be certified; and if it doesn't continue to meet the requirements, it would not be able to meet compliance objectives	

Question #4		
Commenter	Comment	
	(2) If the PRC-002 requirements were not interconnection-wide, then DT should ask whether or not the obligation for the DME characteristic plans be assigned to the PC or TOP rather than the Regional Entity? PCs and TOPs have a better understanding of their own locality than would a region that may be tempted to homogenize the characteristic requirements	
	(3) should ad hoc hardware details (sampling rates, file naming; format) be left to NAESB rather than NERC? Reliability only needs the information - efficiency and commonality would seem to be more related to Business Practices.	
Response:		
this Project 2007-11 l standards. You will ha for public comment. T development process	uestions which are outside the responsibility of the SAR drafting team. It is anticipated that as part of PRC-002 and PRC-018 will be revised and coordinated with the development of eight related regional ave the opportunity to comment on the continent-wide and related regional standards as they are posted The SAR drafting team also encourages members of the IRC SRC to actively participate in the standards es at the continent-wide and regional levels. The SAR drafting team will note IRC SRC's comments in the by the standard drafting team during the development of the standard.	
Midwest SCG	This particular proposed standard appears to fall into the category of a Technical Standard (refer to the Reliability Standards Development Procedure). The intent of this type of standard is that it measures something or provides information downstream in the reliability process. There is a need for such standards, but they shouldn't be handled the same way as a performance standard (failure of which directly impacts reliability). The FERC Order on the standards suggested NERC could look at creating an "administrative infraction" category for compliance. It seems we have the opportunity to address the fact that there is a need for such standards, but they need to be treated differently than performance or preparedness standards. We don't need to onerous penalties if their DFR encounters a temporary problem or a legacy piece of equipment doesn't provide all the data at the rate required in the new standard.	
Response:		
will be required to pro	e the SAR drafting team cannot respond to; however, the standard drafting team for Project 2007-11 popose the compliance elements of these standards and Midwest SCG can comment on the compliance andards are posted for public comment.	
Dominion VA Power	No comments until first draft is posted.	
ERCOT	No further comments at this time.	

Question #4		
Commenter	Comment	
Manitoba Hydro	There are no comments to submit at this time.	
NPCC CP9 RSWG	No further comment at this time.	