

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Jeff Hackman	
Organization:	Ameren Services	
Telephone:	314-554-2839	
E-mail:	jhackman@ameren.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Agree with the idea. However, we believe that phrases such as "identification of the authority" do not speak to a uniform requirement. The standard would be well served to tighten this language to exactly define the requirement and to include as an appendix an "example of excellence" as a guide, or some other similar means, to demonstrate explicitly what is desired.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: While a case could be made that the only generator operators that would participate in a Blackstart plan are able to be defined and thus easy to target for training, it is not the case with field switching personnel. For blackouts resulting from sabotage or natural disaster, it is highly likely that many field switching personnel will be called into duty to aid in restoration that can not be pre-determined or would not be logical choices for yearly training. For example, many utilities rely on contractors, other utilities, and even staff employees during storm or disaster events. These people may be trained to various work, e.g operation of a switch or operation of switches in a control room that may be necessary depending on the extent of the blackout, the duration, and the extent of other damage. Even those people who routinely perform switching may be called to a more important purpose during a restoration event if a replacement employee from one of the "emergency responder" categories could be used. The switching training will be nothing but a feel good which does not contribute to reliability. It would be far better for the requirement to be that following an event a TOP showed it utilized appropriate levels to support the restoration.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Again, the nuance that is supposed to be derived from this wording is not clear. again, please state what you mean and if necessary use an example to define.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: This is a very worthwhile change.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

Individual Commenter Information (Complete this page for comments from one organization or individual.)		
Name:	Thad K. Ness	
Organization:	AEP	
Telephone:	614-716-2053	
E-mail:	tkness@aep.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**  
**Lead Contact:**  
**Contact Organization:**  
**Contact Segment:**  
**Contact Telephone:**  
**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region*	Segment*

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: EOP-005, R1& EOP-006, R1– The first sentence of EOP-005, R1 needs revised to reflect its intent. It presently says the Transmission Operator shall have a restoration plan approved by its Reliability Coordinator "following" an event that requires the utilization of Black-start recourses. As written, the requirement could be misinterpreted to mean you need to have an approved plan only after using the plan to restore your system. The verbiage should be clear that you need an approved plan. The same is true with the wording of EOP-006, R1.

EOP-005, R1.1 & EOP-006, R1.1 – The proposed training standard PER-005 requires system operator position/control center tasks for reliability and emergency be identified, by each operating entity for their system operator positions, from the PER-005 Attachment A Generic Task List. This PER-005 requirement has a 36 month time frame of implementation. If these tasks are identified under the PER-005 standard, we do not see the benefit or necessity of documentation in the EOP. The black-start plan is implemented via system operators. Identification of plan parameters will by default fall to the assigned reliability tasks of the system operator personnel as identified in PER-005. Also, the time implementation would be an issue with the EOP, as the tasks identified in the EOP must match the tasks identified for the PER-005 standard.

EOP-005, R1.1 – We do not agree with naming the tasks of field switching personnel. The transmission sub-station field switching personnel are already trained for operation and switching of the sub-station equipment and know their associated tasks. They do it on a daily bases. Tasks performed on any equipment with operating, control power, or other problems are dealt with during maintenance and repair by the field personnel on a routine bases, much of which are under emergency situations which often include reliability situations. Any tasks they perform for restoration are under the authority and direction of system operators in the control center. Since field switch-person tasks are performed under the authority of the System Operator, they are directed as functions of the System Operator Emergency Operations Tasks to implement emergency procedures and direct restoration.

EOP-005, R1.2 - The Blackstart Resource Facility Plans (BRFP) first appears in R1.2. but it is not defined until R12. Suggest adding the definition in R1.21.since the wording is similar to the wording appearing in R12. Adding the definition sooner would lead to a more understandable requirement.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: EOP-005, R10 – We do not agree with mandating 2 hours of annual training for field switching personnel. Their initial training gives them the required training to qualify and certify them to perform switching. Their daily job is switching, operating, and maintaining the sub-station and line equipment. All field-switching by field switching personnel is done under the authority and direction of the NERC certified system operators in the operating/dispatch centers. The System Operators give detailed step by step switching instructions to field-switching personnel, whether emergency or routine maintenance switching, related to the isolation and restoration of equipment. Instructions are not given to unqualified personnel. Instructions are given to qualified personnel only. Our Company policy requires a switchperson to take a refresher course if a switchperson has not switched within a twelve month period. Consequently we find little value in mandating an annual two hour training session for every switchperson on the AEP system. Field switching personnel will follow the switching instructions given by the System Operators/Dispatchers during black-start the same as they do in other situations of maintenance, emergencies following storms, and emergencies of other unplanned outages. In most cases, these are step-by-step instructions. However, we could support a requirement mandating 2 hrs of annual training for field switching personnel that have not performed switching in the past 12 months.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: EOP-005, R5 – As the neighboring Transmission Operator area to be resynchronized may be under a different Reliability Coordinator, we propose the following wording change for R5:

Each affected Transmission Operator shall resynchronize islanded area(s) with neighboring Transmission Operator area(s) only with the authorization of the Reliability Coordinator(s) and in accordance with the established procedures of the Reliability Coordinator(s).

EOP-005-2, R9 & EOP-006-2, R7 – The subject R9 and R7 requirements mandate training for "control room personnel". Why change the accepted and more common term of "operating personnel"? The NERC term for certification of personnel is "System Operator Certification Program" (TO, BI, BT, & RC). We recommend keeping the identification name consistent with certification program terminology (System Operators) and PER-003 (Operating Personnel Credentials). OSHA also uses the term "system operator" for personnel in charge of the power system lines or equipment.

EOP-005-2, R9 & EOP-006-2, R7 – In the existing approved EOP-005-1, the Compliance Monitoring Process requires "annual training of operating personnel" in the implementation of the Transmission Operator's System Restoration Plans and restoration exercises. EOP-005-2, R9 & EOP-006-2, R7, draft 1, does not identify how often personnel must be trained in the emergency operations topics training program. Is the intent annual? Will this be revealed in draft 2 of these standards with the compliance requirements? There is no compliance monitoring processes in draft 1.

EOP-005, R11 & R16 – We do not agree with the verbiage of R11 & R16.... "as requested by its Reliability Coordinator"..... related to drills, exercises and simulations. We feel the verbiage should put a minimum number as to the number of Reliability Coordinator drills, exercises and simulations in which the Transmission Operator must participate, and the number should be in agreement with Reliability Coordinator requirements of

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

EOP-006, R8. The present wording would require the Transmission Operator to participate in all drills, regardless of number, if the Reliability Coordinator provided and requested such. The Transmission Operator is required to train all its system operating personnel on their restoration plan, so participation in the Reliability Coordinator's restoration drills and exercises are in addition to the Transmission Operators training drills, exercises, and simulations. We recommend the wording of R11, R16 and M10 be changed to correspond with the wording of the EOP-006-2, R8 requiring Transmission Operator inclusion in a RC black-start restoration drill, exercise, or simulation once every two years. The following wording is suggested for EOP-005, R11 & R16, which specifies the minimum number of participations:

"Each Transmission Operator (or Generator Operator for R16) shall participate in its Reliability Coordinator's restoration drills, exercises, or simulations as provided and requested by its Reliability Coordinator at least once every two years".

EOP-006-2: Add a new requirement as R 2.4: The Reliability Coordinator shall provide to the Transmission Operator written documentation of approval of the Transmission Operator's restoration plan.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

Individual Commenter Information (Complete this page for comments from one organization or individual.)		
Name:	Jason Shaver	
Organization:	American Transmission Co.	
Telephone:	262 506 6885	
E-mail:	jshaver@atcllc.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input checked="" type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: We agree with the Standard Drafting Team's decision to incorporated the "elements of consideration" into the standards.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: ATC agrees that this standard should apply in those situations that require Blackstart Resource.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: ATC does not agree with the requirement to train field switching personnel and request that it be deleted. ATC believes that emergency field switching done during a blackout is no different than field switching performed during planned events or other emergencies. In addition, the field switching personnel work under the direction of a NERC certified system operator.

If the SDT determines its necessary to address this issue, then we recommend that the SDT request NERC to have a personnel specific committee explore the idea.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: We do not agree with the proposed definition for "Blackstart Resources". The proposed language would allow an entity to claim it has a "Blackstart Resource" even if the unit's availability is directly dependent on its pre-disturbance activity. In other words if the unit was on prior to the blackout then it may be available following

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

the event, but if the unit was offline prior to the blackout then it will not be available post disturbance.

A "Blackstart Resource" should be limited to a generator that has the ability to start without system support.

An adequate level of reliability is dependent on the ability to restore the BPS following a blackout. That concept should not be dependent on the pre-disturbance status of the Blackstart Resource.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

ATC believes that this standard may require Regulatory support in terms of locating a "Blackstart Resources" and testing. The standard requires testing of these resources which may use up some unit's emission constraints.

At a minimum NERC should ask the question about emission constraints surrounding "Blackstart Resources".

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

– The TOP is currently responsible for transporting energy supplied from the Black Start generator interconnection point to restore the transmission grid as a whole under the restoration services portion of the Transmission Tariff. The costs of planning for, and implementing this responsibility are currently reimbursed under the network transmission tariff.

– If by "securing blackstart services" it is intended that the TOP must contract with generators or otherwise arrange with "Black Start Generators" to provide this capability, ATC cannot support this approach unless a mechanism is also provided that will allow the TOP to include any costs that might be incurred in transmission rates.

– ATC, is willing to be responsible as the TOP to enter into agreements for Black Start Services with generators that are interconnected to ATC's transmission facilities, and anticipate making the necessary tariff filings or otherwise arrange for reimbursement for any costs incurred through the regional transmission organization.

– If the Standard is eventually written that the TOP is responsible for "procuring" or "arranging" for the service, an adequate timeframe prior to implementation of the requirement must be allowed to pursue the necessary rate and other tariff approval together with the required agreements prior to this standard becoming enforceable.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

The standards appear to be drafted from the perspective of a vertically integrated utility, not in terms of the NERC functional model entities. The conspicuous absence of the NERC functional entity "Balancing Authority" in both EOP-005-2 and EOP-006-2 produces doubt as to the value of the standards. The BA should be intimately involved in all aspects of the system restoration plan and the execution thereof.

The existing NERC Balancing Authority Standards BAL-001 through BAL-006 do not apply during system restoration efforts. Further, the proposed standards EOP-005-2 and EOP-006-2 do not address the operations of the Balancing Authority during system restoration events.

Comments specific to EOP-005

No training is specified for the BA system operators. The system restoration scenario is very unique and challenging in terms of balancing resources to load. Load behavior will be very dynamic – cold load pick up and loss of diversity will be significant factors during the restoration process. Since the BA is ultimately responsible for balancing under all conditions, it is imperative for the BA to be involved in the training for restoration and the implementation during an event.

Applicability EOP-005-2

ATC believes that the Applicability section be expanded to include the BA, LSE and DP. Requirement 1.8 should have a counter requirement that requires the BA, LSE and DP to follow the TOPs orders during the restoration effort.

The Term System Shut Down needs to be better defined. (EOP-005-2 Requirement 1)

EOP-005-2

Requirement 2 Suggested rewording:

Each Transmission Operator shall review its restoration plan at least annually and update, if necessary.

Question on Requirement 2:

The term deficiencies is not defined by the SDT so will each TOP be allowed to determine the severity of the deficiency that would trigger the update to the plan?

Requirement 6 and 9

ATC believes that Standard EOP-005-2 would be more readable if the Standard Drafting Team (SDT) split the standard into two standards. It's our suggestion that Requirements six and nine be moved to a new standard to address blackstart generator testing.

In addition to moving these requirements into a separate standard ATC believes that the SDT should write an industry standard for blackstart resources.

- Frequency of testing
- Demonstrate ability to start the unit when isolated
- Demonstrate ability to energize a dead bus
- Demonstrate ability to remain stable an control voltage
- Demonstrate ability to maintain acceptable frequency
- Determine a minimum testing duration

Lastly those results should be shared with the Transmission Operator.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Failure to write specific industry standards will create fill-in-the-blank standards for the Transmission Operator.

Requirement 6.3 is a statement not a requirement. ATC recommends that this statement be deleted from the standards. What does a failure of Requirement 6.3 represent?

Requirement 9 should be rewritten to require the blackstart generator operator to supply the BRFP data to its TOP. ATC does not understand the need to require an agreement for this data.

Requirement 7 and 10

ATC strongly believes that any training requirement should be moved to the NERC PER standards. This standard should focus on blackstart efforts not training issues.

EOP-006-2

Requirement 5 (suggested rewrite)

The Reliability Coordinator will authorize and coordinate re-synchronizing neighboring TOPs.

Requirement 7

Should be removed from this Standard and be placed in a PER Standard.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Thomas Fung	
Organization:	BCTC	
Telephone:	(604) 699-7430	
E-mail:	thomas.fung@bctc.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:**  
**Lead Contact:**  
**Contact Organization:**  
**Contact Segment:**  
**Contact Telephone:**  
**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

Suggest replace "normal" state in R1 with "stable" state. The end configuration might be normal state if the disturbance originated outside the Balancing Authority's Area.

Requirement R1.1 is the first time in this Standard that identifies field switching personnel. The Standard requires field switching personnel to have their authority identified. Field switching personnel would only be expected to have authority to complete operations where the Transmission Operator or System Operator did not have SCADA control of equipment as FERC 693 suggests. And this authority should only have to be identified clearly for restoration and only if communications were lost. The lack of SCADA control (as suggested by FERC in order 693) for restoration should be identified in the requirement as the trigger for identifying authority of field switching personnel.

Suggest adding "if applicable" to end of R1.3.

The statement in R1.5 that allows System Operators to use professional judgement to modify plans under the conditions listed is a good idea.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We agree with removing language for partial shutdown as part of this restoration standard, but we disagree that restoring from a partial shutdown is normal operations. The concepts taught to System Operating personnel for restoration from a partial shutdown or a complete shutdown are the same.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Comments: This training should be covered in the PER Standards that are being re-worked at the same time.

FERC Order 693 said in part "System restoration requires the participation of not only control room personnel but also those outside of the control room. These include blackstart unit operators and field switching operators in situations where SCADA capability is unavailable. As such, the Commission believes that inclusion of periodic system restoration drills and training and review of restoration plans in a system restoration Reliability Standard is the most effective way of achieving the desired goal of ensuring that all participants are trained in system restoration and that the restoration plans are up to date to deal with system changes." The training required in EOP-005-2 R10 and R15 are missing the words "where SCADA capability is unavailable". The wording in R10 and R15 are also not clear who exactly is required to be involved in this required training. Suggest adding the words "where SCADA capability is unavailable".

R15 says Generator Operators not Generator Operators of Blackstart Resources. Is this requirement meant to cover more than Generator Operators of Blackstart Resources? If yes, they should be clearly defined which Generator Operators must be trained.

Generator Operators of Blackstart Resources are required to test the plant once every three years to ensure the plant is capable of meeting the requirements of being a Blackstart Resource. A certain amount of training goes into meeting this test. Would 4 hours of training to test the Blackstart Resource meet this requirement or is the training that is being suggested as required annually be different? If it is different the Standard should say that as we believe the training program for Generator Operators in R15 is part of the blackstart testing we do every 3 years. Who would be required to maintain these training records for an audit, the Generator Operator or the Transmission Operator?

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: The time frame for training for RC's is not defined. Is this an annual requirement or is this left up to each RC how often they train each RC?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: Agree with the concept but suggest the following revision to the 2<sup>nd</sup> sentence in R1. "The restoration plan shall have a priority of restoring the integrity of the Interconnection under the direction of the Reliability Coordinator as required." Alternately, suggest deleting the clause "under the direction of the Reliability Coordinator". During the time when the Transmission Operator is restoring its own System, doing this under the direction of the Reliability Coordinator would not make best use of the Reliability Coordinator's time and knowledge.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

None

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

None

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

This Standard is not applicable to Balancing Authorities. Why are these operators not covered?

R6.2.3 and R6.2.4 should be moved to R3. Tests to ensure voltage and frequency stability while energized to a minimum Load level may only be possible via simulation since the TO would require the LSE to provide this Load and it is highly unlikely customers would to agree to this type of test.

The new training for personnel outside the Control Room has been identified as an annual requirement but the existing words in EOP-005 for TO Control Room personnel and EOP-007 for RC Control Room personnel does not detail the training requirement as an annual requirement. Was all the training requirements listed in the Standards meant to be an annual requirement?

EOP-005-1 had a requirement to periodically test telecommunication facilities that are required to implement a blackstart plan. Is this covered in another Standard or is this no longer required?

EOP-005-1 R16 requires each Generator Operator to participate in the RC's restoration drills as requested by the RC. Is this meant to be Generator Operator's with Blackstart Resources or all Generator Operators?





NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	John Jonte	
Organization:	CenterPoint Energy	
Telephone:	713-207-2252	
E-mail:	john.jonte@centerpointenergy.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: It is appropriate to incorporate the elements from Attachment 1 into R1. CenterPoint Energy agrees with FERC that more than just control room personnel would be involved in system restoration. However, CenterPoint Energy disagrees that field switching personnel should be specifically identified. Field switching personnel follow switching orders in any restoration situation, regardless of its cause, and therefore specific task identification specifically related to blackstart restoration is not warranted. In other words, field switching personnel would not perform any tasks during a blackstart system restoration that they would not perform as part of their normal, day to day duties. Specific training in blackstart restoration is therefore not required.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Any training requirement should be contained within the appropriate PER standard. However, field switching personnel should not be included. The role of field switching personnel in a black start restoration situation would not differ significantly from storm restoration or other service restoration situations. Therefore, specific training requirements are not warranted. (See response to Q.1. above.)

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

EOP-005-2 R12 requires documented agreements specifying terms and conditions. CenterPoint Energy believes it is unnecessary and inappropriate to have such a requirement in a standard. Documented agreements are a business issue between two or more parties and can not be mandated by NERC standards. However, if such a requirement is ultimately established, consideration should be given to requiring such agreements to be for at least a three year term, with the same blackstart resources committed for at least a three year period. This will help ensure competent performance in a blackout event, with the blackstart resources remaining consistent for a reasonable period of time. A three year term would align with the three year testing of Blackstart Resources (R6.1), as well as meeting the five year (minimum) verification of the restoration procedure by actual simulations (R3).

Additionally, because changes in blackstart resources significantly impact the blackstart paths, changing the blackstart resources on an annual basis may negatively impact efforts to comply with other reliability standards. For example, CIP-002 requires that "critical assets" and subsequently "critical cyber assets" be identified and that these "critical assets" be identified along the blackstart paths. Changes to the blackstart paths on an annual basis could significantly alter an entity's critical asset list, and significantly impact an entity's ability to project its critical cyber assets associated with each critical asset. While an annual assessment of critical assets is required by CIP-002, CenterPoint Energy does not believe CIP-002 envisions that an entity's critical asset list would change dramatically from year to year. However, changing blackstart resources and ultimately blackstart paths could in fact have a dramatic impact on an entity's critical asset list.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Charles A. Bunnell
Organization:	Consumers Energy Company
Telephone:	(517) 788-7211
E-mail:	cbunnell@cmsenergy.com
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/> 3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input checked="" type="checkbox"/> 4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: NA

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: NA

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: R15

Consumers agrees that it is appropriate for the Standard to require the generator operator to provide training to its operating personnel, however, the generator operator should be allowed flexibility in determining what training is necessary to ensure it meets its obligations set forth in the transmission operators BRFP.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: NA

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: NA



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

NA

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

NA

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: Comments on EOP-005-2 (System Restoration and Blackstart)

R1.4

The transmission operator needs to coordinate with the generator operators when identifying acceptable operating voltage and frequency limits during restoration. Generator underfrequency relaying and terminal bus voltage limits will affect the acceptable limits.

R9.4

The Standard should be more specific as to the applicability of R9.4. Is this related to synchronizing between transmission networks or between the transmission operator and the generator operator?

R12

Please clarify what is expected to be included in the generator operator's BRFP. Are we to assume that only those items mention in R12 (name of the resource, location, megawatt and megavar capacity, type of unit, fuel type, latest date of test, test results, starting method and procedures for the startup of the blackstart resource) are what is expected?

R14

MISO currently does not have an ancillary service market for blackstart services. The testing requirements being established by the transmission operator need to be mutually agreed upon by the generator operator to ensure that (a) the testing requirements are



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

feasible and (b) the testing requirements do not create a significant financial burden on the generator operator.

R15

Consumers agrees that it is appropriate for the Standard to require the generator operator to provide training to its operating personnel, however, the generator operator should be allowed flexibility in determining what training is necessary to ensure it meets its obligations set forth in the transmission operators BRFP.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Jack Kerr	
Organization:	Dominion Virginia Power	
Telephone:	804-273-3393	
E-mail:	jack.kerr@dom.com	
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> SERC	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region*	Segment*

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Dominion's position is that system restoration training should be provided to each of our approved transmission field switching personnel as part of their re-qualification training that is currently performed on a three year cycle. In fact we intend to integrate this training into the qualification program whether or not the proposed requirement for such training is approved or not. This training will cover all of the switching tasks identified in our system restoration plan. We do not agree that such training is necessary on an annual cycle, and an annual requirement would needlessly disrupt our established and proven training cycle. A three year cycle is the current requirement for blackstart resource testing, and we believe that a three year cycle is adequate for qualifying field switching personnel as long as the qualification training covers all components of switching tasks identified in the system restoration plan as it may change and become more complex over time.

Therefore, Dominion believes that requirement R10 of EOP-005 should read as follows:

R10. Each Transmission Operator shall provide System restoration training at least every three years for each of its authorized transmission field switching personnel for the tasks identified in its restoration plan.

Dominion's position is that the blackstart generator operator needs to know how to coordinate with the Transmission Operator, how to perform a black start-up, how to

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

perform switching, and how to control the generator voltage and frequency as load is added during a system restart. The operator is familiar with most of these activities through experience gained while normally operating the generator and through the normally scheduled blackstart testing. Therefore, we do not agree that a minimum of four hours of training per year is necessary based on the day to day activities that the generator operators perform. If there is to be a training requirement, it should be based on the topics that should be covered rather than be time based.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Greg Rowland	
Organization:	Duke Energy	
Telephone:	704-382-5348	
E-mail:	gdrowland@dukeenergy.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Duke Energy

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: In moving the Attachment 1 to EOP-005, the SDT made it a requirement that all elements of the attachment be part of a restoration plan. The previous version did not require this and stated where applicable. The SDT should reword their statement in R1 to say "The restoration plan shall include the following where applicable:" Audit teams could review this requirement as it is currently written and find a company in non-compliance because they do not have a Requirement in their plan and the company could not have a need for that requirement. The SDT also changed the wording in R1 and placed priority of a restoration plan on the restoring of the integrity of the Interconnection. Why does this need to be stated when that is the purpose of all restoration plans? And by including this statement, is a conflict introduced with requirement R1.7 and the restoring of off-site power to a Nuclear Station. Some people could interpret that as saying that you need to establish the transmission network integrity before you restore power to a nuclear facility. While it may be understood by some that in restoring power to a nuclear facility is establishing the integrity of the transmission network, it may not be understood by all.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: At generator facilities, operators may be required to perform non-routine duties associated with blackstart, such as switchyard activities. It is appropriate to provide blackstart training for these individuals. However transmission field switching personnel would be performing familiar tasks under the direction of the Transmission Operator, and do not need specialized training. We have hundreds of field switching personnel, and providing two additional hours of training purely on blackstart restoration is unwarranted.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: We agree with this approach, with certain clarifications. The existing EOP-006-1 requires the Reliability Coordinator to be aware of the restoration plans of Transmission Operators within its RC Area (R1), and to have a current copy of each plan that it relies upon to confirm that it meets R1 (M1). The revised EOP-006-2 requires the Reliability Coordinator to review and approve the Transmission Operators' plans (R2). We do not see a need for the RC to approve each Transmission Operator's restoration plan, or to have a copy of the plans, since the RC is unlikely to have the level of detailed knowledge that the balancing authorities and transmission operators have for setting-up the stable islands required under restoration plans. Requiring the RC to approve those plans implies that the RC must have the requisite expertise to approve them, and within 30 days (R2.3). The revised EOP-006-2 also requires the RC to have a RC Area restoration plan with documented coordination between Transmission Operator plans and neighboring RC Area plans (R1). R1 is sufficient to address FERC's concern that the RC be involved in the development and approval of system restoration plans, and R2 is not needed.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

None

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

None

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The existing EOP-005-1 includes Balancing Authorities, and requires them to work with the TOs and RC(s) to determine the extent and condition of the isolated area(s), coordinate with TOs and generators to adjust generation, place additional generators on line, or load shedding (R11.1 and R11.2). The BAs are also required to review Interchange Schedules and make adjustments as needed to facilitate restoration (R11.3). The revised EOP-005-2 and EOP-006-2 no longer have applicability to the BA, and we believe they should have applicability to the BA with these same requirements.

R8 of EOP-006-2 requires the RC to conduct two drills, exercises or simulations each year, and to include Transmission Operators and Generator Operators with Blackstart Resources at least every two years. We believe the RC should only be required to conduct one annual drill, and to include Transmission Operators and Generator Operators with Blackstart Resources at least every two years.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

R1.1 of EOP-005-2 requires that the Transmission Operator's restoration plan identify the authority and tasks of the Transmission Operator's control room and field switching personnel assigned to participate in restoration activities. We do not agree that restoration plans should identify authority and tasks of field switching personnel since these personnel are not NERC-certified and only act under the direction of the Transmission Operator's NERC-certified control room operators.

R2 of EOP-005-2 requires that the Transmission Operator's restoration plan be updated within 90 days after completing permanent modifications that would change the planned Cranking Paths or after detecting deficiencies in the restoration plan. We agree with making updates within 90 days for major changes in Cranking Paths, or to correct deficiencies in the plan. For example, changing the Cranking Path at the substation level (i.e. breaker or switch change) would not be considered a major change. However changing blackstart units or transmission line path would be a major change. We believe that an annual update is sufficient for any non-major changes.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Will Franklin	
Organization:	Entergy Services, Inc. System Planning & Operations (Generation & Marketing)	
Telephone:	281-297-3594	
E-mail:	wfrankl@entergy.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: Please identify the "other standards" in which the drafting team believes is covering partial shutdown recovery.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments:

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes, we agree with the definition. Consider adding a frequency component to the definition (as mentioned in the testing criteria).

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

EOP-005-2:

R1.5 : This authority is not appropriate in a NERC standard. Each entity's own procedure may choose to include such language however it should not be a requirement to allow an operator to deviate from a procedure.

R4: This requirement should be applicable whether or not Blackstart Resources are used to restore the system. Consider striking the phrase "and the use of Blackstart Resources is required to restore the shut down area to service." Consider rewording this requirement to state "work in conjunction with it's Reliability Coordinator to:" and then list items 4.1 through 4.3.

R6: Are there any fuel supply requirements for a Blackstart Resource? The test should indicate if the test must be performed on the fuel that would be used during a blackstart. Must the fuel supply be able to support a certain length of operation without support from the BES? Are pipelines acceptable sources, or are their certain requirements that would apply if a pipeline were the fuel supply?

M4, M5: As commented for R4, consider removing "in which Blackstart Resources have been utilized..." and phrase it such that it applies during any restoration of service to shut down areas. Also M4 & 5 are redundant, recommend consolidating as one Measure, unless the desire is to have a unique line item Measure for every Requirement.

EOP-006-2:

R1.6: This authority is not appropriate in a NERC standard. Each entity's own procedure may choose to include such language however it should not be a requirement to allow an operator to deviate from a procedure.



**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Doug Hohlbaugh	
Organization:	FirstEnergy Corp.	
Telephone:	330-384-4698	
E-mail:	hohlbaughdg@firstenergycorp.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** FirstEnergy Corp.  
**Lead Contact:** Doug Hohlbaugh, Standards Development Manager  
**Contact Organization:** FirstEnergy Services Company  
**Contact Segment:**  
**Contact Telephone:** 330-384-4698  
**Contact E-mail:** hohlbaughdg@firstenergycorp.com

Additional Member Name	Additional Member Organization	Region *	Segment *
Sam Ciccone	FE Services Company	RFC	1
Dave Folk	FE Services Company	RFC	1
John Reed	FE Services Company	RFC	1
John Martinez	FE Services Company	RFC	1
Ken Dresner	FE Solutions - Fossil Generation	RFC	5
Jerry Sanicky	FE Services Company	RFC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: FE Agrees - The information in the attachment of every standard should always be immediately included into the body of the requirements section.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: FE Agrees

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: FE Disagrees.

We do not support the proposed R10 requirement of EOP-005-2. FE's field switching personnel do not independently perform transmission switching without taking direction from our transmission operations staff. It is FE's view that our field personnel do not need to be trained in the "big picture view" of system restoration and that the tasks required of them would not be significantly different than switching steps performed during normal operations.

With regard to proposed requirement R15 of EOP-005-2, we agree with the proposed training for the Generator Operator related to the system restoration plans. However, the SDT should further clarify the Generator Operator definition for this requirement; i.e. plant generator operator or control center generator operator with oversight of multiple units, or both.

Furthermore, we do not agree with including training requirements in the EOP standards. We recommend that all training requirements be included in the PER set of training standards. Also, there is a current NERC project (2006-01) that is creating new requirements for system personnel training. The new standard is PER-005 and it discusses training with regard to system restoration in requirement R3. The SDTs for



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

this project and the 2006-01 project should coordinate the training requirements and keep them in the PER set of standards.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: FE Agrees with the need for a revised "Blackstart" term. However, the definition seems longer than required with much of the verbiage repetitive and unnecessary.

Therefore we propose the following revised definition: "Blackstart Resource - A generation Facility under the control of the Generator Operator with the ability to start itself without support from the System and that meets the restoration plan of the Transmission Operator."

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: FE Agrees - But we would we recommend considering further consolidation of EOP-006 into the proposed EOP-005-2. Since the standards coordinate with each other, it would alleviate having to constantly look at both standards from both a compliance and standards development standpoint. These standards go "hand-in-hand" since the Transmission Operator and Generator Operator would need to have an understanding of what the Reliability Coordinator would be asking of them, and vice versa.

If the standards are kept separate, we need to point out that requirement R8 of EOP-006-2 ["Each Reliability Coordinator shall conduct two System restoration drills, exercises, or simulations per year which include the Transmission Operators and Generator Operators with Blackstart Resources in their area of responsibility as dictated by the particular scope of the drill, exercise, or simulation that is being conducted. Each Transmission Operator and Generator Operator with Blackstart Resources shall be included in a drill, exercise, or simulation at least every two years."] does not coordinate with its counterpart requirement, R11, in EOP-005-2 ["Each Transmission Operator shall participate in its Reliability Coordinator's restoration drills, exercises, or simulations as requested by its Reliability Coordinator."]. There should be an agreement between the RC and TOP/GOP functions as to when it would be feasible to conduct these drills with consideration for those times of the year when all TOP/GOP personnel resources are occupied with a busy work load. We suggest adding statements within these requirements with regard to such an agreement.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: FE Agrees

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: FE has the following additional comments:

1. A good set of EOP requirements will achieve the goal of eliminating need for any existing regional standards, so we need to work towards a good set of blackstart standards.

2. In EOP-005-2, the "Agreement" between the Transmission Operator (TOP) and the Generator Operator per per requirement R12 needs to be coordinated with the Reliability Coordinator (RC), especially since in some instances RC acts as the TOP. Also, requirements regarding this "agreement" should be included in EOP-006-2. Plus this further points to the need for consolidation of EOP-006-2 into EOP-005-2 per our comments to Question #5 above. Additionally, it is not clear what would be considered an acceptable "agreement". We suggest that the SDT consider a similar approach to defining Agreement expectations as is currently done in the BOT approved NUC-001 standard.

3. FE does not agree that it is necessary to review the restoration plan each year. We believe it could be reviewed less frequently without compromising the reliability of the BES. We suggest "every 5 years", and then also a qualifying statement such as "or when changes in the System warrant a more frequent review."



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Florida Power & Light  
**Lead Contact:** Jeff Gooding  
**Contact Organization:** Florida Power & Light  
**Contact Segment:** Transmission owner  
**Contact Telephone:** 305-442-5804  
**Contact E-mail:** jeff\_gooding@fpl.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Marty Mennes	Florida Power & Light	FRCC	1
Pedro Modia	Florida Power & Light	FRCC	1
Frank Prieto	Florida Power & Light	FRCC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: I do not believe that a restoration plan should be a step by step plan based on an assumed set of conditions for a particular event. A restoration plan needs to be developed in such a manner that it provides guidance and allows flexibility to address many different sets of conditions and events. In addition the restoration plan should be tailored for each particular system and therefore should not require approval of the Reliability Coordinator as long as all the requirements associated with the NERC Standards are satisfied. The Reliability Coordinator should not perform a compliance monitoring function if this is what is intended by the approval.

There is no need for A Black Start Reliability Plan independent of a System restoration Plan. The System Restoration plan requirements include, location of blackstart units, MW and Mvar capability, start time, and fuel requirements.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Generator Operators and field switching personnel have no decision making role in the process of system restoration.

R-16 If the term Generation Operators must remain then it should be clear that these are the Generation Operators only responsible for Operation of the Black Start resources.

All training requirements should be covered under Per-005. Training requirements sprinkled throughout the Standards become confusing.

Clarification needs to be given on the what type of training is required for authorized transmission field switching personnel.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No. The terms "basic ability to start it self" and "under the control of the generation operator" need to be clearer.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: R8 requires two restoration drills, exercises, or simulations per year. This is a new requirement and not one merged from EOP-007

The approval of sytem restoration plans by the Reliability Coordinator is also a new requirement. Prior wording used in the Standards was "shall be aware of the restoration plan of each TOP", I believe this was sufficient. Does this requirement hold the Reliability Coordinator accountable if the TOP's plan turns out to be insufficient when implemented? Does this place the RC in a compliance monitoring role?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

R1.3 To what level do cranking paths need to be identified?

R1.5 should be removed, PER-001 states that Operating personnel have the responsibility and authority to implement actions to ensure reliable operation of the BES up to and including shedding of firm load.

EOP-006-2 R2.2 The RC should not be responsible for approving or disapproving with a written response the TOP's system restoration plan, this should be the responsibility of the RRO for compliance monitoring.

EOP-006-2 R8 Conducting a System restoration drill twice a year with all Transmission operators and generation operators of the blackstart resources is an overkill. I would recommend that a drill be conducted once a year with only the TOP's and GOP's that play a major role in restoring the BES.

R4 and R5 should be removed, EOP-004 addresses reporting of disturbances.

R9, All Training requirements should be in the PER Standards.

R10 Should be removed. Field personnel do not have a decision making role in system restoration, they execute specific directions from the Transmission Operator.

R11 Should be removed. 1. The RC should not be responsible for all TOP's in the area to attend regional drills. 2. All TOP's should not be required twice a year to attend regional drills, Some TOP's have no effect on restoration of the BES.



**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** FRCC  
**Lead Contact:** Eric Senkowicz  
**Contact Organization:** FRCC  
**Contact Segment:** 10  
**Contact Telephone:** 813-207-7980  
**Contact E-mail:** esenkowicz@frc.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Alan Gale	City of Tallahassee	FRCC	5
Richard Kinas	Orlando Utilities Commission	FRCC	1
Mark Bennett	Gainesville Regional Utilities	FRCC	5
Stephen Joseph	Tampa Electric Company	FRCC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: The DT has re-defined the intent of attachment 1. The "Elements for Consideration in Development of Restoration Plan" are now requirements that "shall be included" but the conversion retains subjective language of the original attachment. After the conversions and as written some of the requirements are still editorial, subjective and open to interpretation.

Comments on R1 language:

What is a "normal state"?

"Following an event that requires utilization of Blackstart Resources". This implies that this standard does not apply to restoration plans for systems that are re-connecting to an energized section of the Interconnection (recovery from "partial shutdown" as described below). If this is the DT intent, the title of the standard should be revised to "System Blackstart - Operations".

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: Recovery from "partial shutdown" is a critical EOP and is much more likely to be encountered by areas of the Interconnections. Requirement R1.6 still addresses restoration of separated systems so the intent of this question as well as wording within R1 of both standards is not clear to us. Coordinated restoration of "partial shutdowns" has to be coordinated with neighboring TOPs and the RC to ensure that a system disturbance causing a local area shutdown does not propagate further, during restoration. Restoration from an energized section of the Interconnection, if available, will always be the preferred, most stable and quickest method for restoring the integrity of the affected BES transmission system. The stability of an energized system makes restoration much more efficient, but the energized system must be protected from an un-coordinated connection to the de-energized system. A Blackstart restoration will inherently transition to a restoration from "partial shutdown" state or configuration.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

No

Comments: Training requirements for EOPs should be centrally located in the PER standards and not embedded within EOP-005 and EOP-006.

For companies with local Generation Control Centers, we agree that training is needed. For companies with Generation, Interchange, and Transmission in the same control center, this training is already required (EOP-005-0, R6 and R7). Field switching personnel are already trained on how to operate switches and devices. In a restoration situation field operating personnel need only to follow the instructions given to them by the System Operator, therefore specific training for field personnel in restoration is not needed.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes, although the wording "basic ability to start itself" is a bit awkward.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: We caution the DT that Reliability Coordinators should not be put in a position as Compliance Monitors. This is not the intention or the design of the NERC Standards program nor the Compliance programs. The Reliability Coordinators should review and be aware of restoration plans but the "approval" step is shifting the responsibility for determining the effectiveness or "acceptability" of a plan back on the RC and effectively puts responsibility on the RC without organizational authority over the various entities within their footprint. This could add significant administrative burden on the RCs while diluting the restoration reliability responsibilities of individual entities.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: A requirement for a Blackstart plan or procedure should include a sub-requirement that specifies that the procedure or plan include a step that the TOP and /or GO shall isolate itself electrically from all other systems prior to initiating restoration activities.

EOP-005, R1 and EOP-006, R1 clearly exempt activities that restore from energized systems from having to comply with these standards. If this is the intent of the current draft we would caution that this approach actually reduces reliability by removing "partial shutdown" restoration coordination requirements from the current standards in place. Blackstart and "partial shutdown" restoration - are extremely inter-related and are part of an optimal de-energized system response plan and an integrated approach to restoring Interconnection integrity by whatever means are available. If this is the intent of the DT then this standard should only address "islanded operations" and should clearly transition to another standard that addresses synchronization of islanded systems or restoration of "partially shutdown" systems.

We would encourage the DT to more clearly define the following terms: "normal state", "priority of restoring the integrity of the Interconnection", "acceptable TOP restoration plan" and "documented coordination". These terms are ambiguous and make demonstrating compliance very subjective. We would also suggest removing all wording using "but not be limited to". This is unnecessary and does not add value to the requirements (ie EOP-005 R6, EOP-006 R4). Standard requirements should focus on requirements and limit the amount of editorial language.

General comments:

In a few requirements / sub-requirements there are multiple requirements embedded within a single requirement. For clarity, we would encourage the drafting team to further breakout individual requirements and sub-requirements where appropriate. ie.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

R1 both standards includes multiple requirements - EOP-005, R1.7 and R12 includes multiple requirements)

A few of the requirements would not be enforceable as drafted. EOP-006 R4 includes words such as "work in conjunction", "monitor restoration progress". Measurement for this type of requirements is subjective at best and would be difficult to measure in a consistent manner. EOP-005, R1.1, "identification of the authority and tasks" is also a subjectively measured requirement and would be difficult to enforce consistently. Requirements that cannot be measured consistently should be re-drafted or deleted. - ex. EOP-005, R1, R1.1

Purpose should be revised to clearly state the intent of this draft, ie, System Blackstart Operations as stated in R1 of both standards.

We appreciate the Drafting Team's efforts on these important standards and hope our comments provide value to the process.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Roger Champagne	
Organization:	Hydro-Québec TransÉnergie	
Telephone:	514 289-2211, X 2766	
E-mail:	champagne.roger.2@hydro.qc.ca	
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 – Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Delete 1.2.1 and revise 1.2 to read: "Document each Blackstart resource and its characteristics, including the following: the name of the Blackstart Resource, location, megawatt and megavar capacity and type of unit."

In R1.8: "Identify within the plan the coordination among Generator Owners, Generator Operators, Load-Serving Entities, Distribution Providers, and Balancing Authorities within its area, its Reliability Coordinator, and neighboring Transmission Operators and Balancing Authorities.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We do not support this, please identify the standard that this requirement is covered in.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Field switching personnel and Generator Operators are sufficiently trained and no specific training are required; these entities do not have decision making authority with respect to system restoration. The interpretation of the term ``operator`` is not clear in the FERC order.

Further, as a generic comment, all training requirements should be contained in the single training Standard PER-005; this comment is applicable to both proposed Standards EOP-005 and EOP-006.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments: No.

The following definition is proposed: Blackstart Resource: A generation Facility and set of equipment under the control of the Generator Operator with the basic ability to start itself without support from the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability.

Reliability concerns point to the high failure rate of islanding schemes as an alternative to a dedicated Blackstart generator.

It is also an issue that the system dispatch would require that these islanding units always operate 24 x 7 throughout the year.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

At this time, no NPCC variance is anticipated.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

No such conflict is seen at this time.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The following revisions are suggested:

1 ) In EOP-005, the measures M4 and M5 should be the report of the event required by Standard EOP-004. The report shall address the requirements of R4 presented in proposed Standard EOP-005.

2 ) In R6.2, the following is proposed:

Delete R6.2.3 and 6.2.4 since real time testing of such requirements is not feasible.

A new R6.2.3 will read:

"Ability to energize a transmission line. If it is not possible to energize a transmission line during the test, the testing entity must affirm that the unit has the capability to energize a transmission line."

3 ) Delete R12 as having no reliability implications beyond those already stipulated in R1.2.

4 ) Delete R13, R14 and R15 as the Generator Operator has no decision making authority in system restoration.

5 ) In EOP-006,

Revise R1.1 as follows: "Identification of the authority and tasks of the Reliability Coordinator to work with its neighboring Reliability Coordinator(s) and with the Transmission Operators and Generation Operators with Blackstart Resources within its area."

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

There should be a recognition for the Reliability Plan to be flexible and responsive to unanticipated conditions.

6 ) In R5, revise as follows: "The Reliability Coordinator shall authorize and coordinate re-synchronizing isolated RC/BA/TOP areas"

7 ) Remove the Generator Operator from R8.

8 ) In R1.6, please clarify this statement regarding how it applies to Blackstart Restoration.

According to Q2, the scope of this standard is limited to System restoration when Black start resources are utilized. The restoration of only islanding situations may not require the use of blackstart resources.

9 ) EOP-006 R8 requiring two drills per year is excessive. NPCC participating members feel that the quality of drills conducted is more important than the quantity.

In addition, EOP-006 R8 , last sentence, should be a separate requirement (R9)

10) The term critical load is subject to interpretation. From a system viewpoint, we view this as load that is critical to provide the needed balance to that portion of the BES to maintain stability and acceptable voltages.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Ron Falsetti
Organization:	IESO
Telephone:	905-855-6187
E-mail:	ron.falsetti@ieso.ca
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We can support this standard to deal with restoration from blackstart only and cover restoration from partial shutdown by other standards. However, the title and purpose of EOP-005 and EOP-006 should be revised to more accurately reflect this scope. An appropriate standard(s) to cover the partial recovery requirements needs to be determined but we do not think that these requirements necessarily fall into "normal operations" as recovery from partial shutdown could well be regarded as emergency operations.

On the other hand, restoration may span from recovering from partial shut down, re-synchronizing islands to blackstart. It is much more desirable to group all restoration requirements in one set of standards regardless of whether or not blackstart resources are required for restoration.

We urge the SDT to consider this option as opposed to limiting this standard to restoring from blackstart only.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: All training matters should be grouped under the training standards. To have a training requirement in each standard that deals with a specific subject creates a difficulty in assessing a complete training need.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No, we do not agree with the definition of this term. The definition of the term must be revised in order to narrow down the scope of the definition to "true" blackstart units only. This way we can ensure that generators which trip on detecting the absence of an energized grid and end up serving station load (islanding scheme) are not considered as a blackstart resource because such units also have the capability to re-energize the grid if they are required to do so and as soon as the synchronization parameters are achieved, but this does NOT make these blackstart units.

Hence, we propose a revised definition which is stated as follows: "Blackstart Resource: A generation Facility and set of equipment under the control of the Generator Operator with the basic ability to start itself without support from the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability."

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: Yes

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: We agree with the replacement, but feel that the requirement to "coordinate" fall short of requiring the RC to direct system restoration especially from a total shutdown. Please see our detailed comments under Q9.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

No

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

We have a number of comments on specific requirements in both EOP-005 and EOP-006, as follows:

EOP-005

1. R1: should "its System" be replaced by "its area" since a Reliability Coordinator Area is described in the functional model as opposed to a Reliability Coordinator "System". Also, we don't think the second sentence belongs to R1 since it is itself a requirement for the TOP to follow the direction of the RC. It should be a separate requirement.

2. R1.2: We have difficulty visualizing how a restoration plan can be "coordinated" with a Blackstart Resource Facility Plan, a term that is not defined. We understand the need for coordinating actions and provision of critical information. We therefore suggest the requirement to be reworded to "Documented procedure that ensures the ability of the Blackstart Resource to control and maintain voltage and frequency within acceptable limits." Note that the term "Blackstart Resource Facility Plan" is not described or defined anywhere, and hence its use should be avoided.

3. R1.2.1: We do not see how inclusion of information such as "latest date of test, test results and starting method" in the TOP's restoration plan can improve or adversely affect reliability. The important requirement is to identify the resources on the cranking path that need to provide blackstart capability, and that such capability is verified to function when needed. We suggest to remove the last part of this requirement. Note that documentation of the test results, etc. are already required in R14.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. R1.7: The term "critical Load" is subject to interpretation. From a system restoration viewpoint, particular from a blackstart, we would view this to mean load that is critical to provide the needed balance to that portion of the BES to be restored to maintain stability and acceptable voltage. In other words, the load is critical to the restoration process. With respect to the other interpretation that it means the load that is critically dependent on electricity supply, such as off-site power, hospital load, etc., this can be very subjectively determined and can vary from area to area. We feel the determination of which load to be supplied first, if this needs to be addressed, should be left to the discretion of the TOP but not as a requirement in a NERC standard.

5. R3: We do not understand what "testing" mean". The cranking path and associated restoration process cannot be tested live. If it means computer simulation or desk top exercise, then the requirement should be reworded to be more specific.

6. R3.3: Acceptable steady-state and dynamic limits are not defined. Reference is made to R1.4 but the latter stipulates operating voltage and frequency limits. Please make them consistent.

7. R4.3: "As required" is not measurable.

8. R6.2.4: "Acceptable frequency" is subject to interpretation, unless it is referred to the range specified in R1.4.

9. R14.1: "the test including time correlation to Load applied (if any), and the unit frequency profile during the test including time correlation to Load applied (if any)" is not specific. We do not understand what it means by "time correlation to Loads applied" and the clause "if any" is subject the requirement too loose.

10. R15.3: Who determines the restoration priorities? And whose priorities, the TOP's or the GOP's? Please be specific.

EOP-006

11. R1.7: whose reporting requirements does the plan include? This needs to be specified.

12. R2: "if acceptable" is not needed since the RC shall review and approve the TOP's restoration plan. The RC would not approve it if it doesn't find the plan acceptable.

13. R5: The TOP is to follow established procedure of the RC to re-synchronize of isolated areas. We suggest changing deleting the word "coordinate" in this requirement, and add a sub-requirement in R1 that the RC develop the re-synchronization procedure.

14. R7: Add R7.3 to include directing re-synchronizing isolated areas.

15. R8:

(i) "Drill" needs to be more specific or clarified - whether it is a full scale drill involving actual switching of equipment, or just a simply desk top exercise.

(ii) The TOP and GOP with Blackstart Resources are to be include in the drill. However, there might be other entities on the cranking path, and they also need to participate in the drill. The requirements should therefore be revised to include all entities identified on the cranking path.

(iii) The way R8 is worded is a bit confusing. The first sentence says the RC shall conduct two restoration drills, exercises or simulations per year with the TOP and GOP with blackstart resources. The second sentence says each TOP and GOP with blackstart

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

resources shall be included in a drill, exercise, or simulation at least every two years. If the first sentence already includes these entities twice a year, why would the second sentence be required?

That said, we think twice a year or even once every two year is to frequent. We suggest a drill, exercise or simulations be conducted once every 3 years.

16. R10: This requirement should be moved to the training standard.

17. General: We realize that the violation severity levels, mitigation time horizons and compliance elements have not been drafted. This and in view of the possible changes to some of the requirements, we have chosen not to comment on the measures at this time. We will offer our comments on these elements at the next posting.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** ISO/RTO Council

**Lead Contact:** Charles Yeung

**Contact Organization:** SPP

**Contact Segment:** 2

**Contact Telephone:** 832-724-6142

**Contact E-mail:** cyeung@spp.org

Additional Member Name	Additional Member Organization	Region*	Segment*
Greg Campoli	NYISO	NPCC	2
Alicia Daugherty	PJM	RFC	2
Ron Falsetti	IESO	NPCC	2
Matt Goldberg	ISO-NE	NPCC	2
Brent Kingsford	CAISO	WECC	2
Anita Lee	AESO	WECC	2
Steve Myers	ERCOT	ERCOT	2
William Phillips	MISO	RFC+MRO+SERC	2

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: We can agree with moving the items from the attachment into the requirements. However, R1's subrequirements are in need of revisions. R1.1 should be broken up into at least two sentences to be clear. Suggested wording: R1.1 Identification of the authority and tasks of the Transmission Operator's control room and field switching personnel assigned to participate in restoration activities. Identification of the responsibility of the Transmission Operator to work with its Reliability Coordinator and with other Transmission Operators. Identification of the responsibility of the Transmission Operator to coordinate its restoration activities with the BAs, GOPs, LSEs, RC, DPs and GOPs (or the specific entities that the drafting team actually meant to require coordination of the restoration activities with) operating within its area.

R1.8 requires that the plan include procedures to coordinate the plan with various entities. We do not believe that this should be required to be in the plan. Coordination of the plan should be the requirement.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We can support this standard to deal with restoration from blackstart only and cover restoration from partial shutdown by other standards. However, the title and purpose of EOP-005 and EOP-006 should be revised to more accurately reflect this scope. An appropriate standard(s) to cover the partial recovery requirements needs to be determined but we do not think that these requirements necessarily fall into "normal operations" as recovery from partial shutdown could well be regarded as emergency operations.

On the other hand, restoration may span from recovering from partial shut down, resynchronizing islands to blackstart. It is much more desirable to group all restoration requirements in one set of standards regardless of whether or not blackstart resources are required for restoration.

We urge the SDT to consider this option as opposed to limiting this standard to restoring from blackstart only.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: All training matters should be grouped under the training standards. To have a training requirement in each standard that deals with a specific subject creates a difficulty in assessing a complete training need.

We also do not see the need for R10. For example, if a field switchman is trained to switch and follow directions of the transmission dispatcher, we do not see the need for a blanket requirement that all switchmen must have specific annual blackstart training. There is also concern that the term switchmen could cause confusion. Does this requirement require training of the person pulling switches in the field or is this a resurrection of the local control center topic?

In R9., the term "existing emergency operations topics training program" should be simplified to "operations training program".

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: NO, we do not agree with the definition of this term. It is conceivable that a generating unit with blackstart capability can be located outside of the identified restoration, or "cranking" path. On the other hand, there can be facilities on the restoration path that do not provide or are not equipped with blackstart capability.

We suggest the SDT to consider requiring the responsible entity (TOP) to:

- (a) Identify a cranking path for restoration from blackstart, and
- (b) designate specific generating sources on the cranking path that have or to provide blackstart capability.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: We agree with the replacement, but feel that the requirement to "coordinate" fall short of requiring the RC to direct system restoration especially from a total shutdown. Please see our detailed comments under Q9.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

No.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

1. R1: "Its System" should be replaced by "its area" since a Reliability Coordinator's Area is described in the functional model as opposed to a Reliability Coordinator "System". Also, we don't think the second sentence belongs to R1 since it is itself a requirement for the TOP to follow the direction of the RC. It should be a separate requirement.

2. R1.2: We have difficulty visualizing how a restoration plan can be "coordinated" with a Blackstart Resource Facility Plan, a term that is not defined. We understand the need for coordinating actions and provision of critical information. We therefore suggest the requirement to be reworded to "Documented procedure that ensures the ability of the Blackstart Resource to control and maintain voltage and frequency within acceptable limits." Note that the term "Blackstart Resource Facility Plan" is not described or defined anywhere, and hence its use should be avoided.

3.R1.2.1 We do not see how inclusion of information such as "latest date of test, test results and starting method" in the TOP's restoration plan can improve or adverse affect reliability. The important requirement is to identify the resources on the cranking path that need to provide blackstart capability, and that such capability is verified to function when needed. We suggest to remove the last part of this requirement. Note that documentation of the test results, etc. are already required in R14.

4. R1.7: The term "critical Load" is subject to interpretation. From a system restoration viewpoint, particularly from a blackstart, we would view this to mean load that is critical to provide the needed balance to that portion of the BES to be restored to maintain stability and acceptable voltage. In other words, the load is critical to the restoration

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

process. With respect to the other interpretation that it means the load that is critically dependent on electricity supply, such as off-site power, hospital load, etc.; this can be very subjectively determined and can vary from area to area. We feel the determination of which load to be supplied first, if this needs to be addressed, should be left to the discretion of the TOP but not as a requirement in a NERC standard.

5. R2.2: We do not agree that the TOP should be required to certify annually to the RC that the plan has been reviewed. This is part of the ERO self certification process, and we do not believe that there is a need to duplicate the ERO function with the RC.

6. R3: We do not understand what "testing" means. The cranking path and associated restoration process cannot be tested live. If it means computer simulation or desk top exercise, then the requirement should be reworded to be more specific.

7. R3.3: Acceptable steady-state and dynamic limits are not defined. Reference is made to R1.4 but the latter stipulates operating voltage and frequency limits. Please make them consistent.

8. R4.3: "As required" is not measurable.

9. R6.2.4: "Acceptable frequency" is subject to interpretation, unless it is referred to the range specified in R1.4.

10. R11. Should specify an actual frequency that participation in an RC restoration exercise is required. Suggested wording:

" R11. Each Transmission Operator shall participate in its Reliability Coordinator's restoration drills, exercises, or simulations at least once every two years when requested by its Reliability Coordinator."

11. R14.1: "the test including time correlation to Load applied (if any), and the unit frequency profile during the test including time correlation to Load applied (if any)" is not specific. We do not understand what it means by "time correlation to Loads applied" and the clause "if any" is subject the requirement too loose.

12. R15.3: Who determines the restoration priorities? And whose priorities, the TOP's or the GOP's? Please be specific.

EOP-006-2

13. R1. This sentence should be broken up to add clarity. The requirement for distribution of the restoration plan should be a separate requirement.

14. R1.7: Whose reporting requirements does the plan include? This needs to be specified.

15. R2: "if acceptable" is not needed since the RC shall review and approve the TOP's restoration plan. The RC would not approve it if it doesn't find the plan acceptable.

What is the recourse if the RC does not approve plan?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

16. R5: The TOP is to follow established procedure of the RC to re-synchronize of isolated areas. We suggest changing deleting the word "coordinate" in this requirement, and add a sub-requirement in R1 that the RC develop the re-synchronization procedure.

17. R7: Add R7.3 to include directing re-synchronizing isolated areas.

18. R8:

(i) "Drill" needs to be more specific or clarified - whether it is a full scale drill involving actual switching of equipment, or just a simply desk top exercise.

(ii) The TOP and GOP with Blackstart Resources are to be include in the drill. However, there might be other entities on the cranking path, and they also need to participate in the drill. The requirements should therefore be revised to include all entities identified on the cranking path.

(iii) The way R8 is worded is a bit confusing. The first sentence says the RC shall conduct two restoration drills, exercises or simulations per year with the TOP and GOP with blackstart resources. The second sentence says each TOP and GOP with blackstart resources shall be included in a drill, exercise, or simulation at least every two years. If the first sentence already includes these entities twice a year, why would the second sentence be required?

We think restoration drills, exercises or simulations should be conducted at the most once very two years.

The RC should not be responsible for the following statement: "Each Transmission Operator and Generator Operator with Blackstart Resources shall be included in a drill, exercise, or simulation at least every two years." If a GOP or TOP fails to participate, is the RC non-compliant?

19. R10: This requirement should be moved to the training standard.

20. General: We realize that the violation severity levels, mitigation time horizons and compliance elements have not been drafted. This and in view of the possible changes to some of the requirements, we have chosen not to comment on the measures at this time. We will offer our comments on these elements at the next posting.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Kathleen Goodman
Organization:	ISO New England
Telephone:	(413) 535-4111
E-mail:	kgoodman@iso-ne.com
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Delete 1.2.1 and revise 1.2 to read: "Document each Blackstart resource and its characteristics, including the following: the name of the Blackstart Resource, location, megawatt and megavar capacity and type of unit."

In R1.8: "Identify within the plan the coordination among Generator Owners, Generator Operators, Load-Serving Entities, Distribution Providers, and Balancing Authorities within its area, its Reliability Coordinator, and neighboring Transmission Operators and Balancing Authorities."

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We do not support this, please identify the standard that this requirement is covered in.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Field switching personnel and Generator Operators are sufficiently trained and no specific restoration training is required; these entities do not have decision making authority with respect to system restoration. The interpretation of the term "operator" is not clear in the FERC order.

Further, as a generic comment to training, all training requirements should be contained in the single training Standard PER-005; this comment is applicable to both proposed Standards EOP-005 and EOP-006.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments: No

The following definition is proposed:

Blackstart Resource - A generation Facility and set of equipment under the control of the Generator Operator with the basic ability to start itself without support from the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability.

Reliability concerns point to the high failure rate of islanding schemes as an alternative to a dedicated Blackstart generator.

It is also an issue that the system dispatch would require that these islanding units always operate 24 x 7 throughout the year.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

At this time, no NPCC variance is anticipated.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

No such conflict is seen at this time.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The following revisions are suggested:

1) In EOP-005, the measures for R4 and R5 should be the report of the event required by Standard EOP-004. The report shall address the requirements of R4 presented in proposed Standard EOP-005.

2) In R6.2, the following is proposed:

Delete R6.2.3 and 6.2.4 since the real time testing of such requirements is not feasible.

A new R6.2.3 should read:

"Ability to energize a transmission line. If it is not possible to energize a transmission line during the test, the testing entity must affirm that the unit has the capability to energize a transmission line."

3) Delete R12 as having no reliability implications beyond those already stipulated in R1.2.

4) Delete R13, R14 and R15 as the Generator Operator has no decision making authority in system restoration.

5) In EOP-006,

Revise R1.1 as follows: "Identification of the authority and tasks of the Reliability Coordinator to work with its neighboring Reliability Coordinator(s) and with the Transmission Operators, Balancing Authority and Generation Operators with Blackstart Resources within its area."

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

There should be a recognition for the Reliability Plan to be flexible and responsive to unanticipated conditions.

6) In R5, revise as follows: "The Reliability Coordinator shall authorize and coordinate re-synchronizing isolated RC/BA/TOP areas"

7) Remove the Generator Operator from R8.

8) R1.6 Please clarify this statement regarding how it applies to Black Start restoration. According to question 2, the scope of the standard is limited to System Restoration when black start resources are utilized. The Restoration of islanding situations may not require the use of blackstart resources.

9) EOP-006 R8 requiring two drills per year is excessive. NPCC participating members feel that the quality of drills conducted is more important than the quantity. In addition, the last sentence in EOP-006 R8 should be a separate requirement R9.

10) The term critical load is subject to interpretation. From a system restoration viewpoint, we view this as load that is critical to provide the needed balance to that portion of the BES to maintain stability and acceptable voltages.

ISO-NE believes that the Balancing Authority is missing from the applicable entity list. The BA is responsible for load/generation balance and frequency control.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Michael Gammon	
Organization:	Kansas City Power & Light	
Telephone:	816-654-1242	
E-mail:	mike.gammon@kcpl.com	
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region*	Segment*

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Agree, no other suggestions.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: There are entities that have designed their systems to break into islands so believe the partial shutdown language should remain in the standard. In addition, not aware of any other place in the standards where restoration of partial shutdown of areas is addressed.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: It is unnecessary to include training for field switching personnel. These personnel do not act independently and are under the direction of Transmission Operators and Generation Operators who are required to be trained in this proposed standard.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

Not aware of any regional variances.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

Not aware of any conflicts.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

Proposed EOP-005-2:

1. Do not agree with the requirement in R1 stating the TO restoration plan must be approved by the RC. The primary substance of these plans are local restoration and are of little interest to the RC. This proposed EOP-005-2 contains the requirements for TO to include in their restoration plans to work in conjunction with the RC, to coordinate the restoration of interconnections with others with the RC, to maintain communication with the RC and to take direction from the RC in the restoration effort. This requirement should be for a TO to submit their restoration plans to the RC for review and coordination.

2. R1.2.1 requires the TO restoration plan to include records of testing of the Blackstart Resources. This will require unnecessary maintenance and update of the restoration plan without change of restoration plan substance. This requirement should be changed to document the testing results but do not require the results in the restoration plan.

3. Suggest removal of R1-5 as it is a requirement with no substance. It is not practical to require something that cannot be adequately measured.

4. R1.8 requires the TO to have "procedures to coordinate" their restoration plans with others. This should be a requirement to "coordinate" with others.

5. Requirement R6.1 allows an entity with one Blackstart Resource to test that resource one time in three years. The requirement should be for an entity to test a Blackstart resource on an annual basis and no less than once every three years. If an entity had 5 Blackstart resources, it could schedule testing for all 5 over a three year period, but at least one every year.

6. Requirement R10 should be removed. It is unnecessary to include training for field switching personnel. These personnel do not act independently and are under the direction of Transmission Operators and Generation Operators who are required to be trained in this proposed standard.

7. Suggest combining participation in RC restoration drills into one requirement by combining requirement R11 and R16.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

8. Do not agree with M3 under the measurements. The documentation required here is too vague and can be too onerous. How much of a load flow output should be saved? The assumptions and the end results? The many runs in between to prove a cranking path(s) are viable? Why isn't the electronic saved cases sufficient documentation? If a Compliance Monitor wants to dive into the details, they would all be there for their inspection electronically.

EOP-006-2:

1. Disagree with the concept in requirement R2 and the sub-requirements of R2 of the RC approving the TO restoration plans for the reasons stated above in item 1 under the EOP-005-2 comments in this question. The requirements here should be for the RC to provide comments back the TO if the RC sees problems and to document those comments for Compliance purposes with the TO.
2. Suggest removal of R1-6 as it is a requirement with no substance. It is not practical to require something that cannot be adequately measured.
3. Requirement R5 should read like R5 in EOP-005-2. The way this is written implies islanded areas within a TO and not between TO's.
4. Requirement R6 seems to be worded funny. Suggest the following change in the text to, "neighboring Reliability Coordinators, Transmission Operators, and Balancing Authorities". The "or" in the submitted text might imply it would be acceptable to exclude a TO or a BA.
5. Requirement R8 should be for "Each Transmission Operator and Generator Operator with Blackstart Resources shall be invited to participate in". It is up to the TO and GO to meet their own participation requirements as dictated in EOP-005-2. It is only necessary for the RC to advertise drills and make them available to the TO's and BA's.
6. There is no review requirement for the RC to update their restoration plan and there should be a requirement.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

Individual Commenter Information (Complete this page for comments from one organization or individual.)		
Name:	Joseph G. DePoorter	
Organization:	Madison Gas and Electric Company	
Telephone:	608-252-1581	
E-mail:	jdepooter@mge.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input checked="" type="checkbox"/> MRO	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input checked="" type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

a) Agree with placing the requirements directly into the standard.

b) In R1, second sentence the word "normal" needs to be removed and replaced with "pre-Disturbance". Normal has not been defined and leaves the reader to determine its definition.

c) In R1.1, It is unclear what "identification of the authority and task of the Transmission Operator's control room and field personnel assigned to participate in restoration activities" means? The Transmission Operator may be leading switching crews from other companies within their transmission area, thus not knowing who is available. This Requirement needs to be reworded so it is clear. This may leads to some training requirements, which would need to be contained NERC Standard category "Personnel Performance, Training, and Qualifications".

d) In R1.2, The term "Blackstart Resource Facility Plan" is used for the first time, but no definition is provided, a definition needs to be provided.

e) In R1.2.1, Is "characteristics" the name plate rating? And what is contained in "test results"? Perhaps the SDT should consider placing together a list (check list) of testable items. Then the GO/GOP would know what NERC requirements need to be tested in order to be compliant. This would also stream line the reporting process, since a uniform list (possibly an attachment to the Standard) that would be reconized throughout the electrical industry.

f) In R1.5, "System Operator" in the second sentence needs to be changed to "Transmission Operator".

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: A partial shutdown could be a normal occurrence, even if a Blackstart Resource is used to bring that portion of the system back to its pre-Disturbance state.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments:

a) All required training that a NERC Standard directs any entity to do should be placed in its own NERC (training) Standard. The NERC Standard category "Personnel Performance, Training, and Qualifications" is established for this purpose. As stated in FERC Order 693, para. 1335, training requirements would not be in one "all inclusive standard". A better fit is to have many individual standards (that specify training requirements listed in Personnel Performance, Training, and Qualifications section of the NERC Standards) under the heading of "Personnel Performance, Training, and Qualifications". If a training requirement is imbedded in a non-"Personnel Performance, Training, and Qualifications" standard, it will lead to possible shortfalls from an entity.

b) Concerning "Generator Operator" training: Concur with FERC's decision (FERC Order 693, para 1332 and 1359) that the Generator Operator as an entity (see NERC definition of Generator Operator) is required to be NERC Trained, not the plant operators located at the generator plant site, based on the following:

As stated in FERC Order 693, para. 1360, "... a generator operator typically receives instructions from a balancing authority. Some generator operators are structured in such a way that they have a centrally-located dispatch center [note: possibly in a System Operations Center where the person performing NERC Standards in accordance with Balancing Authority are also the Generator Operator] that receives direction and then develops specific dispatch instructions for plant operators under their control". "In this type of structure, it is the personnel of the centrally-located dispatch center that must receive formal training in accordance with the Reliability Standard. Plant operators located at the generator plant site also need to be trained but the responsibility for this training is outside the scope of the Reliability Standard".

c) We should not CONFUSE Generator Operator (a registered NERC entity) with plant personnel.

d) Per NERC Definition: "Generator Operator is: The ENTITY that operates generating unit(s) and performs the FUNCTION of supplying energy and Interconnected Operations Services".

FERC states that plant operator training is outside the scope of a Reliability Standard within FERC Order 693, para, 1361, again.

FERC Order 693, para. 1365, states " regarding the need for a size limitation on generator operators...We believe that limiting the applicability of Reliability Standards to NERC's definition of bulk electric system will alleviate much of... the expanded requirements on end users who have on-site generation". The SDT need to state this in the proposed Standard.

e) Concerning "Field Switching Personnel" and "blackstart unit operators" training: Per FERC Order 693, para. 627, states "...PER-005-1 only includes Requirements on the control room personnel and not those outside of the control room. System restoration requires the participation of not only control room personnel but also those outside of the control room. These include blackstart unit operators and field switching operators in situations where SCADA capability is unavailable". According to the above paragraph, any type of training should be in PER-005-1 and not within EOP-005-2 (described in first sentence of para. 627).

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

f) There should not be an hour (training) requirement (or mention) for non-NERC certified personnel within any NERC Standard ("Field Switching Personnel" and "blackstart unit operators"). Key people need to be in the training loop for restoration processes, but the NERC Standard training requirement can only apply to personnel who hold a NERC Certification. SRB SDT should remove training hour requirements for non NERC Certified personnel from the NERC Standard. The NERC Standard is not a receptical of NERC Requirements (?) for NON NERC Certified personnel.

g) There may be a few items that require specilized training in the restoration of the BES. One may be the synch'ing of two islands or ensuring backup systems are working within limits for pipe type cable. Perhaps these requirements could be held at the Transmission operator or Regional Entity level.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No. The following corrections need to be made to the definition of "Blackstart Resource".

a) After "Facility" in the first sentence , delete "and set of equipment", NERC definition of Facility is "A set of electrical equipment...", "and set of equipment" makes the sentence redundant.

b) Delete the word "basic" in the second sentence. A Blackstart Resource must be able to (Black)start on there own or not. There is no room for "basic ability".

c) Change the word "or" to "and" in the second sentence after "without support from the System". Just about every unit would be able to stay online if not connected to the remainder of the System, if it had the proper amount of load. You could have a blackstart unit online and only be providing station services to itself.

d) Concur with the last sentence in the definition of Blackstart resource stating "... and meeting the Transmission Operator's restoration plan needs for real and reactive power capability". But this is the only place that the Transmission Operator can make any minimum real and reactive power requirements to Generator Facilities on Blackstart Resources. This should be stated in a requirement (that the Transmission Operator will set minimum real and reactive limits for Blackstart resources).

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

No. But this Standard may impact existing regional variances.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

YES, All required training that a NERC Standard directs any entity to do should be placed in its own NERC (training) Standard. The NERC Standard category "Personnel Performance, Training, and Qualifications" is established for this purpose. As stated in FERC Order 693, para. 1335, training requirements would not be in one "all inclusive standard". A better fit is to have many individual standards (that specify training requirements listed in Personnel Performance, Training, and Qualifications section of the NERC Standards) under the heading of "Personnel Performance, Training, and Qualifications". If a training requirement is imbedded in a non-"Personnel Performance, Training, and Qualifications" standard, it will lead to possible shortfalls from an entity.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: Yes.

Concerning EOP-005-2.

a) R1.2.1, R1.4, R3.1, R6.2.3, R12, and R14.1 all refer to voltage and in particular megavar capacity. During an actual blackout, the Blackstart Resource may be able to handle the leading MVar's that an un-energized transmission line produces. Blackstart Resource owners are not able to accurately test the unit's megavar capacity to absorb Vars since we tend to keep the transmission system energized. The SDT will need to change the wording so Blackstart Resource owners can be compliant with the standard.

b) R3 and R6 imply that the Transmission Operator owns generation assets. They do not. The rewording of these requirements is needed.

c) R6.2.3 and R6.2.4 will not be able to be completed if the Blackstart Resource owner can not accomplish R6.2.2. R6.2.3. and 6.2.4 need to be reworded incase the Blackstart Resource owner can not accomplish R6.2.2.

d) R11 and R16 should be combined as one requirement and a time limit set, ie, "once every two years".

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

e) R12, For clarity, in the forth sentence, after Transmission Operator's restoration plan add "as identified in R7".

f) R14.1, First sentence states test results should be provided to "Reliability Coordinator and Transmission Operator." Propose that all reporting on capabilities of black start plan should be performed by transmission provider as they are responsible for black start plan. Generator Operator should provide testing data to Transmission Operator and Transmission Operator should provide data to RC and RE as required.

g) R14.1, Last sentence "Loads applied (if any)" does not agree with R6.2.3, that states ".. while isolated from the BES and supplying minimum Load level ..." The SDT needs to change the wording so both requirements compliment each other.

Concerning EOP-006-2.

a) R1.6, "System Operator" should be changed to "Reliability Coordinator".

b) R2.2, The thirty day window for the RC to respond to the TO's plan may not be enough time. The RC may be reviewing multiple plans and will need to model and simulate the (un) expected outcomes for restoration of the innerconnection. Time frame should be expanded.

c) R4, Forth sentence, "normal" should be changed to "within acceptable limits".

d) R8, Transmission Operator's do not own Blackstart Resources, delete from paragraph. Transmission Operator's may have Blackstart Resources within their transmission operating area. Last sentence states the Generator operator shall be included in a drill, exercise, or simulation at least every two years, yet the first sentence requires to test twice a year. The STD needs to reword R8 so it is clear and understandable.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Doug Rempel	
Organization:	Manitoba Hydro	
Telephone:	204 487 5427	
E-mail:	dbrempel@hydro.mb.ca	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input checked="" type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: I believe that a clearer definition of what a restoration plan is meant to cover is needed.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: I am in agreement with MISO in that if the training content is covered then you don't need to define how many hours of training is required by generator operators and field switching personnel.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: In EOP-005-2, R1 - there is a need to more clearly state the type of event that requires a restoration plan and what the intent of the restoration plan is. You cannot have a plan for every conceivable event that requires the use of blackstart resources.

The type of approval the RC gives to a TOP plan should be more clearly defined, people have to understand what it means when approval is given or rejected.

EOP-005-2 R3.3 how far along in the restoration effort are these studies required, does it include right up to the last load applied or is there a logical point the studies should be taken to.

EOP-005-2 R10 Can this be narrowed down a little to those required or identified in the restoration plan?

EOP-006-2 R4 This requirement gets into taking action to restore frequency, which is more of an emergency operations event than a system restoration event. it could be limited to the following: "Each Reliability Coordinator shall work in conjunction with affected Balancing Authorities, Generator Operators, and Transmission Operators as well as neighboring Reliability Coordinators to monitor and coordinate restoration progress." The rest can be deleted from the requirement. "take actions to restore the Bulk Electric System frequency to normal. Such actions would consider but not be limited to: adjusting generation, placing additional generators on line, or shedding Load."

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: What other standards is this requirement covered in? A partial shut-down may still require utilization of cranking paths and black-start units to speed restoration. We are not aware that this is covered in any other standard.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: While generator operators and field switching personnel should participate in drills associated with restoration, we are not sure it is appropriate to extend obligations beyond registered entities (field switching personnel and power plant workers may have no affiliation with the respective BA or TOP). Most utilities have scores of individuals that do field switching and in all cases they are working under the direction of a transmission operator. The specified training in Requirements R10 and R15 should only apply to those Transmission Operator and Generation Operator personnel that direct system restoration actions carried out by personnel in the field and generating plants

Assuming Generator Operators does not encompass personnel in the plant, requirement R15 of the Standard needs to be revised to delete the requirement for "a minimum of four hours of training per year." Requirement R15 already includes a minimum content for the training program for Generator Operators. As long as the training given meets the training content requirement in R15, there is no need, and it is inappropriate, to specify a required duration for the training. Also, since the training content is specified in R15, this requirement is measurable and there is no need for training duration to be added just so the requirement can be measured in this manner.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: The definition appears to deal only with the starting point of the cranking path (typically a combustion turbine or hydro unit) and leaves out the first generator downstream along the cranking path. This is where the real challenge takes place. This plant must be able to start up with a limited supply.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: In general, we agree that many of the requirements from EOP-007 logically should be applied to the RC. However, we question the requirement for the RC to approve the TOP plan. What approval means is not defined in the standard. Does it mean that the RC guarantees the TOP plan will work, that the plan follows a consistent format or is it something else. Also, what is proposed if a plan fails to be approved? Which entity is non-compliant? It would be more appropriate for the RC to review, rather than approve, subordinate plans.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: We agree with this approach in general. However, we do not believe 30 days is enough time to review TOP plans.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: In R2 of EOP-006-2, the "if acceptable" language should be removed. The sub-requirements should define what acceptable is. They do not adequately do this now.

In R1 in EOP-006-2, the sentence with the word integrity should be struck? Integrity is a relative term. Requirements should not be relative. Additionally, this sentence adds no additional value. The sub-requirements adequately specify what should be contained in the plan.

We notice that in R2.3 in EOP-006-2 that the RC may not approve the TOP plan. Is there any additional requirement on the TOP to work to modify their plan to gain RC approval? We didn't see one. The standards give the TOP 90 days to update their plans once a change is identified. This may be too long. We recommend 60 days for updating and at least 60 days for the RC to review the plans.

R8 in EOP-006-2 only requires each TOP and GOP to participate in drills every two years. No BA participation is required. We believe BA participation should be required and annual participation should be required.

M4 in EOP-006-2 indicates that the RC shall have the TOP plans in its control center. Can they be electronic? If yes, can the wording be changed to access to the plans? If the plans reside on a central storage device, it technically is not likely in the control center. If only paper copies are acceptable, this should be specified.

M6 in EOP-006-2 mentions an isolated area. What is meant by isolated area? Could this be the loss of a single transmission circuit with multiple load taps? Technically, one

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

could argue it is isolated but we do not think that is the intent here. We suggest you consider defining isolated area or provide more detailed explanation in the measure.



**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** MRO NERC Standards Review Subcommittee

**Lead Contact:** David Rudolph

**Contact Organization:** MRO

**Contact Segment:** 10

**Contact Telephone:** 701-355-5722

**Contact E-mail:** drudolph@bepc.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Joe Knight	GRE	MRO	10
Terry Bilke	MISO	MRO	10
Mike Brytowski	MRO	MRO	10
Eric Ruskamp	LES	MRO	10
Pamela Oreschnick	XCEL	MRO	10
Rober Coish	MHEB	MRO	10
Neal Balu	WPSR	MRO	10
Carol Gerou	MPr	MRO	10
Jim Haigh	WAPA	MRO	10
Ken Goldsmith	ALTW	MRO	10
Tom Mielnik	MEC	MRO	10
Michael Brytowski	MRO	MRO	10
27 additional MRO members	not mentioned aboce	MRO	10

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: The MRO does not agree with adding violation risk factors to every requirement. Additionally, when new requirements are proposed they should be value added, not just for documentation that needs to be reviewed and updated. The MRO does not agree with removing the BA from standard EOP-005-2, as they have a critical function in blackstart system restoration. The MRO would suggest including any limitations of the Blackstart resource and the fuel type of the Blackstart resource in requirement 1.2.1.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: The MRO would like the SDT to clarify who exactly needs training regarding field switching personnel and the duties they perform. Does an entity need to train all field personnel for all duties, due to the rotating nature of duties performed by field personnel?

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: The MRO feels the definition of Blackstart Resource is unclear and would suggest using a more concrete term such as Blackstart Plant or Blackstart Facility.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: Should the SDT assign the RC to this standard, then there needs to be a transition period for the RC when assigning them new requirements. The MRO wants to recognize the continued need for Regional Planning.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

The MRO is not aware of any issues.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

The MRO is not aware of any issues.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The MRO would suggest completing Section D (Compliance) for both standards EOP-005-2 and EOP-006-2 before commenting begins. Also, in R2.1 of EOP-006-2, shouldn't the RC's restoration plan be compatible with the individual BA and TOP restoration plans. The MRO would assume that the RC's restoration plan be comprised of the individual restoration plans within their area.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Michael Schiavone
Organization:	National Grid
Telephone:	315-471-4813
E-mail:	michael.schiavone@us.ngrid.com
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Neither directs restoration therefore this requirement is unnecessary. They only need to follow the direction they are given.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Alden Briggs	
Organization:	New Brunswick System Operator	
Telephone:	(506) 443-6508	
E-mail:	Alden.Briggs@nbso.ca	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region*	Segment*

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Delete 1.2.1 and revise 1.2 to read: "Document each Blackstart resource and its characteristics, including the following: the name of the Blackstart Resource, location, megawatt and megavar capacity and type of unit."

In R1.8: "Identify within the plan the coordination among Generator Owners, Generator Operators, Load-Serving Entities, Distribution Providers, and Balancing Authorities within its area, its Reliability Coordinator, and neighboring Transmission Operators and Balancing Authorities."

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: A lot of partial shutdowns require restoration as per an Areas restoration plan so I would not eliminate the term. What is meant by a partial shutdown anyway? How big of an area does it cover? For example, the 2003 blackout could be considered a partial shutdown of the Eastern Interconnection and these Standards surely are meant to cover similar situations. Possibly one could use partial shutdowns, if applicable, ....

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Special restoration training for the field personnel is not required. They should be trained sufficiently through their normal training process.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

The following definition is proposed:

Blackstart Resource - A generation Facility and set of equipment under the control of the Generator Operator with the basic ability to start itself without support from the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: The RC is the proper entity.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

No NPCC variance is expected.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

None.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The following revisions are suggested:

Are there any liabilities associated with the RC approving the TOP restoration plan? Although the NBSO agrees with the RC having a copy of the plans and approving them in principle, the RC should not be held responsible for typos and etc.

Revise R1.1 as follows: "Identification of the authority and tasks of the Reliability Coordinator to work with its neighboring Reliability Coordinator(s) and with the Transmission Operators, Balancing Authority and Generation Operators with Blackstart Resources within its area."

In R5, revise as follows: "The Reliability Coordinator shall authorize and coordinate re-synchronizing isolated RC/BA/TOP areas"

NBSO believes that the Balancing Authority is missing from the applicable entity list in section 4. The BA is responsible for load/generation balance and frequency control and therefore plays an important role in the restoration process.

The terminology Cranking Paths seems to be very dated and should be replaced by Station Service Supply Path or something similar.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	James Castle	
Organization:	New York ISO	
Telephone:	518-356-6244	
E-mail:	dcastle@nyiso.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input checked="" type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: If the definition of a Blackstart Resource is "A generation Facility..", then the term Blackstart Resource Facility Plan is redundant and confusing.

There is no need for requirements for a Black Start Reliability Plan independent of a system restoration plan. From the viewpoint of requirements for a system restoration plan, the location, MW and MVAR capacity and the start time are required aspects of the restoration plan.

Latest type of unit, latest date of test, test results

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Generator operators and field switching personnel have no decision making role in the process of system restoration. Switching personnel follow switching orders, as is their normal function. Generator operators keep their units running, keep the dispatching entity (TO or ISO) appraised of the unit capabilities, and follow the MW/MVAR instructions of the dispatching entity, as is their normal function.

All training requirements should be included in PER-005.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments: No. In M.M. Adibi's presentation to the EPRI System Restoration Workshop 3/16/2007 presented successful performance for generator islanding schemes at 50-60%. If we are counting on that sort of success rate, the transmission operators will have to be contracting for large amounts of blackstart and/or testing those islanding schemes on a very rigorous schedule. Testing the islanding schemes sounds like a major headache to me. It would be more straightforward deal with the traditions definition of blackstart.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: I

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

no

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

no

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

I would like the drafting team to respond to these specific questions:

- 1) What are the limits of "units to be started" in R1.2?
- 2) What is the incremental value of R1.5 over the requirements of PER-001?
- 3) Why does the standard define as acceptable an unworkable restoration plan for to exist for up to one quarter of a year?
- 4) How is it physically possible for generators to perform the black start tests required in R14 without having possession of the test requirements R6?

There is no need for "Generator Operators with Blackstart Resources" to be listed as one of the applicable entities. The system restoration plan is the Transmission Operators plan. Blackstart resources are an essential part of the Transmission Operators plan. It is the Transmission Operators responsibility to insure that the black start resources are adequately contracted and tested. The Blackstart resources have no responsibilities in the restoration plan outside its obligations to the Transmission Operator.

Requirement 1.2 has no meaning and it unenforceable. "Units to be started" is every generator on the system. Using that rule, one could assume that something like 50% of a systems transmission would have to be designated "cranking paths".

Requirement 1.5 should be a requirement of the restoration plan, not the people. The restoration plan should provide sufficient flexibility to address actual conditions at the time of the blackouts. System Operators always have the obligation and authority to

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

address system conditions, whatever they are. Requirement 1.5 should be eliminated as it is completely redundant with NERC Standard PER-001.

### PER-001

R1. Each Transmission Operator and Balancing Authority shall provide operating personnel with the responsibility and authority to implement real-time actions to ensure the stable and reliable operation of the Bulk Electric System.

M1.4 Written operating procedures that state that, during normal and emergency conditions, operating personnel have the authority to take or direct timely and appropriate real-time actions. Such actions shall include shedding of firm load to prevent or alleviate System Operating Limit Interconnection or Reliability Operating Limit violations. These actions are performed without obtaining approval from higher-level personnel within the Transmission Operator or Balancing Authority.

Requirement R2, as written permits a Transmission Operator to run the system for one quarter of a year with a non-viable restoration plan. That is unacceptable. Does the Transmission Operator not know that wires are being strung and stations built until commissioning is complete and the equipment is energized? Change time requirement to prior to permanent modifications being made.

R4 and R5 in EOP-005 and R4 in EOP-006 should be eliminated as they are completely redundant with EOP-004. If the report required by EOP-004 for a blackout investigation does not include checking restoration performance versus NERC Restoration Standard Requirements, then EOP-004 should be deleted as meaningless.

R6 should be eliminated as pointless. At worst, combine it with R14. How is it physically possible for generators to perform the black start tests required in R14 without having possession of the test requirements?

R7 should be eliminated as unnecessary. This requirement prevents the Transmission Operator from perpetrating a reliability fraud - counting on reliability resources that are known to be non functional. Are reliability frauds possible in all standards but this one?

R10 should be eliminated. Field switching personnel have no decision making role in restoration.

R11 should be moved to EOP-006. It is the responsibility of the Reliability Coordinator to insure that all Transmission Operators in that jurisdiction participate in drills and exercises, as required.

R12 is a business issue and has no impact on system restoration. It should be eliminated.

R13 should be eliminated. The mechanics of how the blackstart facility brings its equipment on-line has no bearing on system restoration. Blackstart operation by definition is independent of external connections. The 90 day notification requirement is purely a contractual business issue which has no place in the reliability requirements.

R15 should be eliminated. Generator personnel have no decision making role in restoration. Their tasks and responsibilities in restoration are identical to those under normal and emergency operations.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

M4 and M5 in EOP-005 and M5, M6 and M7 in EOP-006 should be eliminated as they are completely redundant with the stated purpose of EOP-004.

M6 and M8 should be eliminated since it is identical to M13. How is it possible to comply with M13 without automatically M6 and M8?

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Joe O'Brien	
Organization:	NIPSCo	
Telephone:	219-853-5470	
E-mail:	jnobrien@nisource.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b> <input type="checkbox"/> <b>FRCC</b> <input type="checkbox"/> <b>MRO</b> <input type="checkbox"/> <b>NPCC</b> <input checked="" type="checkbox"/> <b>RFC</b> <input type="checkbox"/> <b>SERC</b> <input type="checkbox"/> <b>SPP</b> <input type="checkbox"/> <b>WECC</b> <input type="checkbox"/> <b>NA – Not Applicable</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
	<input type="checkbox"/>	2 – RTOs and ISOs
	<input checked="" type="checkbox"/>	3 – Load-serving Entities
	<input type="checkbox"/>	4 – Transmission-dependent Utilities
	<input type="checkbox"/>	5 – Electric Generators
	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
	<input type="checkbox"/>	7 – Large Electricity End Users
	<input type="checkbox"/>	8 – Small Electricity End Users
	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: It may be desirable to have all training requirements in a single standard such as PER-005. It is not clear who the generator operator is in this context. Is that a person at the generating station or at the central operations center?

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes/No The new definition looks fine however Blackstart Resource Facility Plans (BRFP) should also be defined and be the term replacing Blackstart Capability Plan.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: It is not certain that the RC or RRO has the resources and information to approve individual TOP restoration plans. The TOPs test the plans using their own expertise.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: The RC should coordinate the restoration plans however this should not include approving the plans.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

EOP-007-RFC-01 will need to be reviewed and updated.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The BA should be included in the restoration standard in the role presently designated in standards earmarked for replacement. The BA would play an important part during restoration especially if the BA and TOP functions have been separated into different companies. Reinforcing this idea is the latest PER-005 which suggests that BAs provide emergency and system restoration training.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** NPCC, Regional Standards Committee

**Lead Contact:** Guy V. Zito

**Contact Organization:** Northeast Power Coordinating Council

**Contact Segment:** 10

**Contact Telephone:** 212-840-1070

**Contact E-mail:** gzito@npcc.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Ralph Rufrano	New York Power Authority	NPCC	1
Murale Gopinathan	Northeast Utilities	NPCC	1
Edwin Thompson	Con Edison	NPCC	1
Randy MacDonald	New Brunswick System Operator	NPCC	1
Mike Ranalli	National GridUS	NPCC	1
Roger Champagne	HydroQuebec TransEnergie	NPCC	1
Ron Falsetti	The IESO, Ontario	NPCC	2
Brian Gooder	Ontario Power Generation	NPCC	3
David Kiguel	Hydro One Networks	NPCC	1
Kathleen Goodman	ISO-New England	NPCC	2
John Bonner	Entergy Nuclear	NPCC	3
Don Nelson	MA Dept of Public Utilities	NPCC	9
Al Adamson	New York State Reliability Council	NPCC	10
Reza Rizvi	NPCC	NPCC	10
Guy Zito	NPCC	NPCC	10

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: Delete 1.2.1 and revise 1.2 to read: "Document each Blackstart resource and its characteristics, including the following: the name of the Blackstart Resource, location, megawatt and megavar capacity and type of unit."

In R1.8: "Identify within the plan the coordination among Generator Owners, Generator Operators, Load-Serving Entities, Distribution Providers, and Balancing Authorities within its area, its Reliability Coordinator, and neighboring Transmission Operators and Balancing Authorities.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We do not support this, please identify the standard that this requirement is covered in.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Field switching personnel and Generator Operators are sufficiently trained and no specific restoration training is required; these entities do not have decision making authority with respect to system restoration. The interpretation of the term "operator" is not clear in the FERC order.

Further, as a generic comment to training, all training requirements should be contained in the single training Standard PER-005; this comment is applicable to both proposed Standards EOP-005 and EOP-006.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No

The following definition is proposed: Blackstart Resource: A generation Facility and set of equipment under the control of the Generator Operator with the basic ability to start itself without support from the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability.

Reliability concerns point to the high failure rate of islanding schemes as an alternative to a dedicated Blackstart generator.

It is also an issue that the system dispatch would require that these islanding units always operate 24 x 7 throughout the year.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

At this time, no NPCC variance is anticipated.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

No such conflict is seen at this time.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The following revisions are suggested:

1) In EOP-005, the measures for R4 and R5 should be the report of the event required by Standard EOP-004. The report shall address the requirements of R4 presented in proposed Standard EOP-005.

2) In R6.2, the following is proposed:

Delete R6.2.3 and 6.2.4 since the real time testing of such requirements is not feasible.

A new R6.2.3 will read:

"Ability to energize a transmission line. If it is not possible to energize a transmission line during the test, the testing entity must affirm that the unit has the capability to energize a transmission line."

3) Delete R12 as having no reliability implications beyond those already stipulated in R1.2.

4) Delete R13, R14 and R15 as the Generator Operator has no decision making authority in system restoration.

5) In EOP-006,

Revise R1.1 as follows: "Identification of the authority and tasks of the Reliability Coordinator to work with its neighboring Reliability Coordinator(s) and with the Transmission Operators and Generation Operators with Blackstart Resources within its area."

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

There should be a recognition for the Reliability Plan to be flexible and responsive to unanticipated conditions.

6) In R5, revise as follows: "The Reliability Coordinator shall authorize and coordinate re-synchronizing isolated RC/BA/TOP areas"

7) Remove the Generator Operator from R8.

8) R1.6 Please clarify this statement regarding how it applies to Black Start restoration. According to question 2, the scope of the standard is limited to System Restoration when black start resources are utilized. The Restoration of islanding situations may not require the use of blackstart resources.

9) EOP-006 R8 requiring two drills per year is excessive. NPCC participating members feel that the quality of drills conducted is more important than the quantity. In addition, the last sentence in EOP-006 R8 should be a separate requirement R9.

10) The term critical load is subject to interpretation. From a system restoration viewpoint, we view this as load that is critical to provide the needed balance to that portion of the BES to maintain stability and acceptable voltages.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	OPG Inc.	
Organization:		
Telephone:	416-592-7712	
E-mail:	brian.gooder@opg.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input checked="" type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: As written the standard implies that Generator Operators do not currently possess the necessary skills to start and synchronize a unit. In addition Ontario already has a comprehensive System Restoration and Blackstart Program that includes training and integrated exercises for operators. This requirement would add an additional training burden. OPG questions the necessity for this additional training burden and requires to know the justification and rationale for its requirement.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Aaron Smith	
Organization:	Omaha Public Power District (OPPD)	
Telephone:	402-552-5166	
E-mail:	atsmith@oppd.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input checked="" type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input checked="" type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

Additional Member Name	Additional Member Organization	Region *	Segment *

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments:

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes, we are in agreement with the definition.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

Individual Commenter Information (Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Ohio Valley Electric Corporation

**Lead Contact:** George Brady

**Contact Organization:** Ohio Valley Electric Corporation

**Contact Segment:** 1

**Contact Telephone:** 740-289-7297

**Contact E-mail:** gbrady@ovec.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Scott Cunningham	Ohio Valley Electric Corporation	RFC	1
Robert Mathey	Ohio Valley Electric Corporation	RFC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: For completely new standards I would agree with the method of incorporating the elements of the Attachment as requirements or sub-requirements. But for this existing standard the elements appear to have been substantially rewritten and include requirements not in the original Attachment. Moving or revising the elements of the Attachment creates burdensome and unproductive work for an entity to re-identify where in its restoration plan the revised elements or new sub-requirements are considered.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: Partial shutdown should not be considered normal operations. Partial shutdown should be considered as emergency operations whether Blackstart Resources are applied or not.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Training requirements should all be in one standard. The training standard should not dictate training contents. Field switching personnel should not be included in any training requirements because these personnel are under the direction and control of a NERC certified system operator.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No, I do not agree with the definition. It is not clear what the word "automatically" means in this context. Does it allow for some operator intervention or no operator intervention at all? The new term which might allow for greater flexibility mis-identifies resources which were never intended to be a Blackstart Resource.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Suggest limiting the definition to the following, "A generation Facility under the control of the Generator Operator with the basic ability to start itself without support from the System."

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: From a practical standpoint it is probably better having the Reliability Coordinator coordinate rather than a Regional Reliability Organization.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

EOP-005-2, R1, delete "approved by its Reliability Coordinator" because the approval is not necessary and overly burdensome on the Reliability Coordinator. The RC will be approving system restoration activities during an actual restoration and will not be following entities restoration plan word for word.

EOP-005-2, R1.1, revise to the following "Identification of the restoration activities to be performed by the Transmission Operator including the responsibility of the Transmission Operator to coordinate with its Reliability Coordinator and other affected Transmission Operators." The inclusion of "authority" in the R1.1 is duplicating the authority requirement in Standard PER-001, R1. Including "field switching personnel" is not required or desired because these personnel are under the direction and control of a NERC certified system operator.

EOP-005-2, R1.2, Delete this requirement because it is written as a measure rather than a requirement. R1.2.1 is too prescriptive and does not enhance system reliability. Suggest deleting R1.2.1. What if an entity has no Blackstart Resources does the requirement still apply?

EOP-005-2, R1.5, this requirement seems only to state the obvious and duplicates a requirement in Standard PER-001, R1. Suggest deleting R1.5.

EOP-005-2, R1.6, change "procedures" to "guidelines." The word procedure implies little or no flexibility where guidelines would suggest the necessary flexibility that would be needed in a restoration event.

## **Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

EOP-005-2, R1.7, change "procedures" to "guidelines." The word procedure implies little or no flexibility where guidelines would suggest the necessary flexibility that would be needed in a restoration event.

EOP-002-2, R2.2, delete this requirement because measure M2 sufficiently covers compliance to requirement R2. Also, confirmation and determination of compliance should be the responsibility of the regional compliance entity not the Reliability Coordinator.

EOP-002-2, R3.2, what if an entity has no load, how can this requirement be satisfied? What if an entity has no network analysis tools because they have never been needed, why should the tools be procured simply to satisfy compliance?

EOP-002-2, R4.2, what qualifies as "off-site power to nuclear stations?"

EOP-002-2, R6, this requirement tends to imply that Transmission Operators shall have Blackstart Resources. Is that the intended interpretation? Suggest revising "Applicability", 4.1, to read "Transmission Operators with Blackstart Resources."

EOP-002-2, R9, suggest changing "control room personnel identified in its restoration plan" to "system operators." System operators are a specific, narrowly defined group. Control room personnel has too broad of a focus. Delete R9.1 through R9.5. These sub-measures are too prescriptive and should be left to the discretion of the entity to include or not to include in its training plan.

EOP-002-2, R10, suggest deleting this requirement because the organizational structures of entities vary too widely to include such a requirement. Also, entities already provide training to transmission field switching personnel for switching tasks.

EOP-002-2, R12, R13, R14, R15, how is compliance determined for these requirements if an entity has no Blackstart Resources? R15 is again too prescriptive in detailing how many hours of training should occur. Sub-measures R15.1, R15.2, and R15.3 should be deleted because they are too prescriptive and do not enhance system reliability.

EOP-002-2, M1, Revised to the following, "Each Transmission Operator shall have a documented System restoration plan." Compliance can be sufficiently measured by the revision.

EOP-002-2, M15, the wording "if requested" should be removed. What if a request was never received? Who is the non-compliant entity?



**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Kris Buchholz	
Organization:	Pacific Gas and Electric Company	
Telephone:	415-973-1218	
E-mail:	kkb1@pge.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b> <input type="checkbox"/> <b>FRCC</b> <input type="checkbox"/> <b>MRO</b> <input type="checkbox"/> <b>NPCC</b> <input type="checkbox"/> <b>RFC</b> <input type="checkbox"/> <b>SERC</b> <input type="checkbox"/> <b>SPP</b> <input checked="" type="checkbox"/> <b>WECC</b> <input type="checkbox"/> <b>NA – Not Applicable</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
	<input type="checkbox"/>	2 – RTOs and ISOs
	<input type="checkbox"/>	3 – Load-serving Entities
	<input type="checkbox"/>	4 – Transmission-dependent Utilities
	<input type="checkbox"/>	5 – Electric Generators
	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
	<input type="checkbox"/>	7 – Large Electricity End Users
	<input type="checkbox"/>	8 – Small Electricity End Users
	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: We don't agree that specific hours of training should be stated for generator operators, but only specify the training that is needed. We also recommend a two year requirement be considered, similar to the drills in EOP-006. We do not agree that the training should go to the field switching personnel since they take orders from the control room. In addition, their switching assignments will be based on their specific locations, wherever that is at the time of the event.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: We are concerned that the phrase "start itself" may be misunderstood as meaning automatically restarting itself.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: EOP-005 R5 makes sense when islanding from neighboring areas, however what if the island is within the same area or even same company, would this apply?

EOP-005 R14.1 We interpret there to be no profiles required if there are no external loads connected during the test. If this is not true, we suggest a change to only require profiles when loads are connected external to the facility.

EOP-006 R8 Requiring two drills per year for the RC seems more than necessary. The intent seems to be that each TO/GO be included every two years, thus the RC should be able to implement this requirement as necessary to have everyone involved and trained.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Lauri Jones	
Organization:	Pacific Gas and Electric Company	
Telephone:	415-973-0918	
E-mail:	LLJ8@PGE.COM	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b> <input type="checkbox"/> <b>FRCC</b> <input type="checkbox"/> <b>MRO</b> <input type="checkbox"/> <b>NPCC</b> <input type="checkbox"/> <b>RFC</b> <input type="checkbox"/> <b>SERC</b> <input type="checkbox"/> <b>SPP</b> <input checked="" type="checkbox"/> <b>WECC</b> <input type="checkbox"/> <b>NA – Not Applicable</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
	<input type="checkbox"/>	2 – RTOs and ISOs
	<input type="checkbox"/>	3 – Load-serving Entities
	<input type="checkbox"/>	4 – Transmission-dependent Utilities
	<input type="checkbox"/>	5 – Electric Generators
	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
	<input type="checkbox"/>	7 – Large Electricity End Users
	<input type="checkbox"/>	8 – Small Electricity End Users
	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities





## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Including training for generator operators and field switching personnel associated with restoration complies with the intent of FERC Order 693, which states "System restoration requires the participation of not only control room personnel but also those outside of the control room. These include blackstart unit operators and field switching operators in situations where SCADA capability is unavailable. As such, the Commission believes that inclusion of periodic system restoration drills and training and review of restoration plans in a system restoration Reliability Standard is the most effective way of achieving the desired goal of ensuring that all participants are trained in system restoration and that the restoration plans are up to date to deal with system changes."

However, the training required in EOP-005-2 R10 and R15 are missing the words "where SCADA capability is unavailable".

R10 and R15 are also not clear who exactly is required to be involved in this required training. Recommend adding the words "where SCADA capability is unavailable" and clearly defines 'those outside of the control room' that would require training so it is not mis-interpreted and can be properly measured.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: It is unclear on the time frame for the Reliability Coordinator training and it is well defined. Would this training be an annual requirement for the RC's or would the training fall on the RRO on how often they train each RC?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: EOP-005-1 had a requirement to periodically test telecommunication facilities that are required to implement a blackstart plan. Is this covered in another Standard or has it been eliminated and is not required?

New training for personnel outside the Control Room has been identified as an annual requirement but the existing words in EOP-005 for Transmission Operator Control Room personnel and EOP-007 for Reliability Coordinators Control Room personnel does not detail the training requirement as an annual requirement. Were all the training requirements listed in the Standards meant to be an annual requirement?

EOP-005-2 R1.7 and R4.2 only lists nuclear stations for high priority of off-site power. EOP-005-2 R.9 states each Transmission Operator shall provide training and even lists the training program topics; it does not give a time frame for this training. Is this training to be annually, if so, it should state it? Also, isn't the existing emergency operations topics training program PER-002 and wouldn't this be a duplicate criteria for the new PER-005-1 System Personnel training?

Training requirements in EOP-005-2 R.11 needs to be clearly defined for the Transmission Operator. Will this be annual training per operator or only upon request of the Reliability Coordinator?

The WECC OTS finds the new System Restoration and Blackstart-Coordination Standards to be duplicating in their training requirements and not well defined in the time frames for this training. The OTS has also identified several training specific needs in other NERC Standards and would like to recommend that all training requirements in the current NERC Standards and future Standards only be identified in the NERC System Personnel Training Standard.

Specific training requirements should be found in one standard, not amongst eighty or more. This allows the training staff responsible for the training compliance measures to coordinate and provide training for all future and current training needs.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Pepco Holdings, Inc. - Affiliates  
**Lead Contact:** David Thorne  
**Contact Organization:** Potomac Electric Power Company  
**Contact Segment:** 1  
**Contact Telephone:** 301-469-5211  
**Contact E-mail:** dkthorne@pepco.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Vic Davis	Delmarva Power	RFC	1
Phillip Vavala	Delmarva Power	RFC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments:

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

R1.3 Several Blackstart units provide cranking power to steam units all located with the Generation Operator's site. The Transmission Operator has no visibility or authority over these internal plant switching paths. This needs to be part of the BRFP and not a requirement for the Transmission Operator.

R3. It is unlikely that most TOs would have an actual event or testing that will satisfy this requirement. Thus the verification will be through steady state and dynamic simulations. Steady state simulations are common and easy to perform. Dynamic simulations are more difficult to perform and involve significant effort. There needs to be some kind of acceptable phase in plan to perform dynamic simulations.

R10. The requirement states that ...training for each of its authorized transmission field switching personnel for the tasks identified in its restoration plan.... Authorized transmission field switching personnel usually means to a TO, all those personnel that are qualified to perform transmission switching. Even though we may dispatch field personnel during a restoration, their duties are their "normally performed duties" under the direction of the System Operator. It is suggested that additional words be added so it is clear that the requirement means training for only those field personnel performing specific restoration tasks during a restoration, beyond normal operating practices.

R15.1 It is suggested that it be specifically stated in the requirements that the training program also include voltage and frequency control. During a restoration event these controls will probably act differently and are critical to the success of the restoration.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Gary Campbell
Organization:	ReliabilityFirst Corporation
Telephone:	330-247-3062
E-mail:	gary.campbell@rfirst.org
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact E-mail:**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region *</b>	<b>Segment *</b>

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: I believe this standard is covering the event in which blackstart resources are needed or complete shutdown has happened. By covering these types of events here and training on these events the industry is ensuring that there is an understanding by personnel and equipment available to restore after these events. Partial shutdown training, understanding of operational processes and procedures and other standards is provided by existing training and docuemntation.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: However I think you need to be clear on your defintion of GOP. As I understand it , GOP's are those which communicate with the BA and relay directions to generating plant personel. Both of these types of personel should have some type of training in my opinion. These people need to be aware of these types of situations. The plant operator is concerned with his or her unit and it's operation however there are things which he should be aware of such as frequency swings during restoration, loading of units, etc. Field Switcing personnel may not make transmission operational decisions but they are involved and need a familiarity with equipment during these types of events.

The training time required should probably be reduced to 2/4 hours every 2 years.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments: Yes, I agree

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: However, If this standard is to set requirements for the RC then the RC should mentioned in the applicability section. The RC should not be involved in any compliance function either as it is not a compliance monitor.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

Yes, TOP's need to be required to have a restoration plan for their entire footprint. R1 needs to be changed to state that TOP's shall have a restoration plan for their entire footprint which is approved..... Reliance on other entities under the TOP's direction during a system restoration is fine however the TOP should have an RC approved restoration plan of its entire footprint available for its operators and training on these other entity restoration plans since the TOP is the entity responsible for implementation of the restoration plan.

If the TOP relies on any of the entities under its purview to provide a part of the plan or perform any functions in implementation of its plan those entities should be subject to the requirements in this standard as they apply to those areas of the restoration plan. This region has TO personnel implementing their restoration plan for the TOP, these personnel should be addressed by this standard concerning what is applicable, training required and possible certification of the operators.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

No

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

R1. The statement " The restoration plan shall have a priority of restoring the integrity of the Interconnection under the direction of the RC" should be a separate requirement or sub-requirement and not listed here if it is something important to the plan.

R1.2 Provide an explanation as to why you are referring to "applicable" BRFPs. This statement should be more explicit. Leaves room for a lot of interpretation.

R1.3 Provide an explanation of a cranking path and what should be included as part of the diagram. Some entities in our region question what a cranking path consists of. Is it a one-line diagram, flowchart of facility names, etc. ?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

R2 - I think the time to update the restoration plan upon a review or change is long. Considering the impact of these events I think we would want to get all entities involved working from the current plan as soon as possible.

Does the ninety days include the approval period for the RC? This could make it even linger.





NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Glenn Kaht
Organization:	ReliabilityFirst Corporation
Telephone:	330.933.3557
E-mail:	glenn.kaht@rfirst.org
<b>NERC Region</b> (check all Regions in which your company operates)	<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/> 1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/> 2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/> 3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/> 4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input type="checkbox"/> 5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/> 6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/> 7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/> 8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/> 9 – Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/> 10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: R1.2.1 requires the TOP to include the latest date of test and test results of each blackstart resource. In R1 the RC is required to approve the Restoration Plan. Would the RC have to approve the plan due to changes in test results? I suggest the test results not be included in the plan, but that the TOP has record of them outside of the "plan."

R1.8 requires the TOP to coordinate with many "applicable" entities. Which of the entities are applicable? Does the applicable entities include all classes of LSEs? If the answer is yes, this would require coordinating with many LSEs that own no physical assets, such as Alternate Retail Electric Suppliers. The drafting team should consider specifying exactly what entities are applicable to the coordination requirement. Otherwise, it is very open to interpretation.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: If a partial shutdown included 90% of a system, it would be difficult to view the restoration as normal operations. In fact, the TOP would implement their System Restoration Plan.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments:

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

R1.4 of EOP-005-2 has the TOP identify acceptable voltage and frequency limits during restoration. R1.5 of EOP-005-2 has the RC identify the same. There seems to be a conflict in having 2 different functional entities identifying the same parameter. The drafting team should consider resolving this apparent conflict.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

R1 requires the TOP to have a restoration plan approved by its RC. If the RC doesn't approve the plan, then the TOP is in violation. This may be outside of the TOP's control. Please consider rewording the requirement to have the TOP submit its restoration to the RC for approval.

R6 has the TOP determine and set testing requirements for Blackstart Resources. This is inappropriate. Testing requirements should be consistent across the Interconnection. They should be specified by a NERC standard.

R7 has the TOP only include Blackstart Resources that have met testing requirements. What if a Blackstart Resource failed a test? The drafting team should consider a timeframe that the TOP must comply with to remove a Blackstart Resource from its restoration plan if it has failed a test.

Is the Blackstart Facility Resource Plan a defined term? The standard says what it must include, but doesn't appear to define it.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Thomas j Bradish	
Organization:	Reliant Energy	
Telephone:	724-597-8593	
E-mail:	tbradish@reliant.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input checked="" type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input checked="" type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input checked="" type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities





## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: The training requirement for generator operators is not needed because:

1. Generator operator is too broad of a term in defining who must be trained. It could mean the control room operator or the person that works the basement. I believe that the standard team means the person that actually starts the unit. In any case the 4 hours of training is over kill. These units, in the majority of the cases are simple cycle CT's that do double duty as black start and as peakers. As a peaker these units are started during high demand periods. The generator operator knows how to start these units so additional training is not needed.

2. The generator operators do what they are told. They do not take any unilateral action in the event of a blackout. The transmission operator must have a very thorough understanding of the sequence of events. The generator operator only needs to understand the process at a high level. It does not take 4 hours of training for this position to get a more detailed understanding. The generator is in possession of the black start recovery procedure. If the SDT feels that training is required then that training requirement should be on the operators' supervisor, not the operator.

3. The black start generator must do an annual test proving the units ability to start without assistance from the grid and sync to a dead bus. This should suffice as adequate training for the generator operator.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: The definition looks good.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments: I suggest that you take a look at how PJM handles the coordination element.

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Training of field switching personnel should not be included in NERC Standards and should be left up to the individual entities. Field switching personnel are not typically NERC certified. This issue could be addressed in NERC Readiness Audits.

Field switching personnel should always be working under the direction of a certified Transmission Operator. Are the tasks performed by switching personnel that much different than their normal switching tasks? While the conditions triggering the performance of the tasks may be abnormal, the tasks are likely the same and a special training requirement for field personnel isn't warranted.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: yes

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: I would like to see the training requirements in R9, R10, R11, R15, and R16 moved to a PER standard. Intermingling training requirements with operational requirements makes it a bit harder to ensure training program compliance. Monitoring every proposed standard for training requirements is essentially what we are faced with today. It makes more sense to use the PER series of standards for all training requirements. This would make for a smaller EOP-005-2, minus 5 requirements, while also being more consistent with the purpose stated in EOP-05-2.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Scott Peterson	
Organization:	San Diego Gas & Electric	
Telephone:	(619) 990-4420	
E-mail:	speterson@semprautilities.com	
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input checked="" type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: I do not agree with the training required of field switching personnel. It is overly prescriptive given the less complex nature of their involvement in restoration. Have a requirement to include system restoration training within the TOPs authorization training for its switching personnel (typically every 3 years). That way to stay authorized, you have to have that restoration training.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

R1.1: The TOP is responsible for coordinating its restoration activities with the other entities operating within its area, but there is no requirement for the other entities to cooperate in that coordination effort or identify themselves to the TOP. What is the list of entities? Is it all the LSEs and PSE one might have in its transmission area. The standard does not put a requirement on them. Even generators without blackstart capabilities need to cooperate in the restoration efforts to bring the system back up.

R1.2.1: The logistics of keeping the restoration plan up to date with the latest test date, test results, and starting method of black start units seem overly complicated. That means everytime any one unit is tested, the plan needs to be updated. Can we simply reference the documentation required of the generator in R14.1 to satisfy this requirement that this be documented.

R1.8 Again, requires that the TOP coordinate with the other entities, but doesn't require most of them to cooperate with that coordination.

R3 This requirement calls for dynamic simulations. Quite often black start units are small, and are not a great contributor to system stability; therefore most of them have a very inaccurate model, a typical model or no dynamic modeling at all. Therefore, performing dynamic simulations maybe impossible or the results will be very inaccurate.

R13 The GOP needs to give a copy of updates to the BRFP to the TOP and RC.





NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Santee Cooper  
**Lead Contact:** Terry Blackwell  
**Contact Organization:** Santee Cooper  
**Contact Segment:** Transmission  
**Contact Telephone:** 843-761-8000 ext. 5196  
**Contact E-mail:** tblackw@santecooper.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Tom Abrams	Santee Cooper	SERC	1
Glenn Stephens	Santee Cooper	SERC	1
Rene' Free	Santee Cooper	SERC	1
Kristi Boland	Santee Cooper	SERC	1
Jim Peterson	Santee Cooper	SERC	1
Wayne Ahl	Santee Cooper	SERC	1

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: As an entity that has implemented its restoration plan following hurricanes, Santee Cooper does not believe a restoration plan should be a step by step plan based on an assumed set of conditions for a particular event. Rather, Santee Cooper believes a restoration plan needs to be developed in such a manner that it provides guidance and allows for flexibility to address many different sets of conditions and events. In addition, Santee Cooper believes restoration plans should be tailored for each particular system, and its particular circumstances, and therefore should not require approval by a Reliability Coordinator as long as all of the requirements associated with the related NERC standards are satisfied (i.e., the RC should not perform a compliance monitoring function if this is what is intended by the approval). Finally, Santee Cooper believes that a restoration plan developed to address a broad range of circumstances would not require the statement in R1.5.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: FERC Order 693 states the "Commission believes that inclusion of periodic system restoration drills and training and review of restoration plans . . .". We recommend that "periodic" training be conducted every 3 years, which is our current policy on refresher training (8 hours) for generator operators and field switching personnel. Providing training for two and four hours annually is not cost effective or productive for personnel involved in shift operations. The eight hours provided by Santee Cooper every three years provides an in-depth review of switching operations than could be provided in two and four hours of training. A requirement of more hours

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

of training every three years will allow for more in depth training with appropriate assessments.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: We suggest replacing the words "to start itself" in the definition with "to be started".

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: Santee Cooper believes that a restoration plan developed to address a broad range of circumstances would not require the statement in R1.6 of EOP-006.

R8 requires two system restoration drills, exercises, or simulations per year. This is a new requirement and not one that was merged from EOP007.

The approval of system restoration plans by the Reliability Coordinator is a new requirement. Does this requirement hold the RC accountable if a TOP's plan turns out to be insufficient when implemented? Does this place the RC in a compliance monitoring role? If the RC does not approve a TOP's plan, is that TOP considered to be non-compliant? Prior wording used was "shall be aware of the restoration plan of each TOP".

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: Blackstart Resource Facility Plans (BRFP) needs to be a definition included in the "Definitions of Terms Used in Standard".

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** SERC Operations Planning subcommittee

**Lead Contact:** Doug McLaughlin

**Contact Organization:** Southern Company Services, Inc.

**Contact Segment:** Transmission Owner

**Contact Telephone:** 205-257-6127

**Contact E-mail:** wdmclaug@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Chris Bradley	Big Rivers Electric Corporation	SERC	1
William Gaither	South Carolina Public Service Auth.	SERC	1
Eugene Warnecke	Ameren	SERC	1
Paul Turner	Georgia system Operations Corp.	SERC	3
Al McMeekin	South Carolina Electric & Gas	SERC	1,3,5
Mike Clements	Tennessee Valley Authority	SERC	1,3,5,9
Pat Huntley	SERC Reliability Corporation, Inc.	SERC	10
John Troha	SERC Reliability Corporation, Inc.	SERC	10
Gregory Mason	Dynegy	SERC, RFC, NPCC, WECC	5

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.





## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We agree with removing partial shutdown from the language; however, we believe the plan should include requirements for the synchronization of islands resulting from partial shutdown of an individual system.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: (1) We do not agree that training requirements should be included in EOP-005, and (2) We don't agree with the "broad brush" approach taken to apply to all field personnel.

(1) We feel strongly that training for restoration should be addressed by the PER Standards rather than in the Emergency Operations Standards.

(2) In addition to the training requirements being too broadly applied to field personnel, they lack detail in what should be covered as compared to the requirements of R9. The specified training in Requirements R10 and R15 should only apply to those Transmission Operator and Generation Operator personnel that direct system restoration actions carried out by personnel in the field and generating plants. Requirement R15 of the Standard needs to be revised to delete the requirement for "a minimum of four hours of training per year." Requirement R15 already includes a minimum content for the training program for Generator Operators. As long as the training given meets the training content requirement in R15, there is no need, and it is inappropriate, to specify a required duration for the training. Also, since the training content is specified in R15, this requirement is measurable and there is no need for training duration to be added just so the requirement can be measured in this manner.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes, with the following change to the definition: replace "start itself" with "be started".

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

No

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

No

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: We commend the drafting team members for their hard work in combining and clarifying the requirements of EOP-005, 006, 007 and 009.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Group Comments (Complete this page if comments are from a group.)

**Group Name:** Southern Company - Transmission  
**Lead Contact:** Jim Busbin  
**Contact Organization:** Southern Company Services, Inc.  
**Contact Segment:** 1  
**Contact Telephone:** 205-257-6357  
**Contact E-mail:** jybusbin@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Marc Butts	Southern Company Services, Inc.	SERC	1
Roman Carter	Southern Company Services	SERC	1
J. T. Wood	Southern Company Services, Inc.	SERC	1
Mike Oatts	Southern Company Services, Inc.	SERC	1
Tom Higgins	Southern Company Generation	SERC	5
John Ciza	Southern Company Generation	SERC	5
Roger Green	Southern Company Generation	SERC	5

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: We agree with the elimination of Attachment 1 as found in Version 1 of this Standard and the placement of its elements into, and under, Requirement 1 of Version 2. We disagree, however, with the change in the applicability of the proposed Standard (to include the provisions of the former Attachment 1) in its transition from Version 1 to Version 2. Balancing Authorities will continue to play a vital role in System Restoration; this Standard should be written to reflect that role. We have further comment on the applicability of this Standard in our response to Question #9.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We agree with the removal of the "partial shutdown" language from this Standard for the reasons stated.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: All training requirements should be centralized in the PER category of Reliability Standards. The EOP-005-2 proposed Standard sets a minimum amount of time to be spent, on an annual basis, in training for both TOP and GO without offering much specificity or guidance, particularly for the TOP (and BA if included), as to what the training will impart. Requirement R.15 is a good beginning. More of the training detail should be developed and then specified in the Standard, perhaps with "training will include as a minimum" language. Once more detail is identified, time estimates of performing that training could then be developed and listed for the GO and TOP (and BA) if the drafting team feels minimum time periods for training should be included in the Standard. We recommend dropping the four and two hour minimum time requirements and focus more on the minimum content to be included in the training.

If the Standard will continue to utilize a "Blackstart Resource agreement", training requirements should be reflected in that agreement.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: No. As we interpret the definition provided with Version 2 of the Standard, we find the definition clouds what a Blackstart Resource actually is. We read the part of the definition "... or to automatically remain energized without connection to the remainder of the System, ..." to be mis-leading. A generating unit that has not tripped off-line and is part of an islanded system but does not have "self start" capability will now be classified as a Blackstart Resource - and it isn't. This unit cannot start without support from the power grid and should not be considered a Blackstart Resource. The "... or to automatically remain energized without connection to the remainder of the System, ..." language in the definition should be stricken.

Also, the Background section (end of the second paragraph) of this comment form states there is a newly defined term - Blackstart Resource Facility Plan - in the proposed Standard. We did not find a definition for Blackstart Resource Facility Plan.

Additionally, the portion of the definition which reads, "..with the basic ability to start itself without support ..." would read better if phrased "... with the basic ability to be started without support ... ."

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: EOP-007 was totally applicable to the RRO. Responsibility for the Standards ultimately rolls back to the RRO. We agree with the change.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

We are not aware of any regional variances that would be required as a result of these standards.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

We are not aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: All comments provided are with reference to the proposed EOP-005-2 Standard unless noted otherwise.

**Generation Related Comments:**

There has been a significant amount of scope creep in the requirements imposed on GOPs and GOs.

1. Requirement 1.2: This requires a Blackstart Resource Facility Plan (BRFP) which adds Mvar capacity to the data. One can provide Mvar rating but transmission system conditions (load and voltage) will dictate Mvar capacity.

2. Requirement 12: Is the Blackstart Resource Agreements new or just a new name. Also, most of this information is covered in Requirement 1.2. Why does the TOP need a copy of the start-up procedure for the blackstart units? We also feel that a Blackstart Resource Agreement for vertically integrated utilities serves no purpose and should be waived in the proposed Standard for vertically integrated utilities.

3. Requirement 13: This requirement requires the GOP to review its resource plan annually but TOPs only have to review the the system's every 5 years (R 3). It appears to us that if anyone needs to review the blackstart plan annually, then it should be the TOP not the GOP. Plant systems don't change often and thus does not need the annual review.

4. Requirement 14: This requirement adds a considerable amount of test and documentation requirements over the existing EOP-009 including special recording devices for voltage and frequency. As written, it appears that actual system restoration and actual unit blackstart have been included in the scope and added to the requirements, not just verification that blackstart units can start - as was the requirement of EOP-009-0. In general we object to these additions. As a GOP/GO we

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

recommend retaining EOP-009 and removing the associated items from EOP-009 added to this standard.

5. Requirement 15: We think that a reasonable amount of training is warranted. However, the standard sets a minimum amount of time for generation and annual frequency. Both of these items should be left to the GO or GOP and/or addressed in the new "Blackstart Resource agreement" added in R 12. As a GO, we think it is interesting that the GOP must do a minimum of 4 hours of training where the TOP has to do only 2 hours (R 10).

6. Requirement 16: This appears to be a new requirement without any clarification of what is expected of the GOP. Clarify or delete.

7. M12 thru M15 need to be revised to reflect comments above.

### Transmission Related Comments:

1. The current EOP-005-1 has applicability to the Balancing Authorities (e.g. R5, R6, R11.3, etc.). There is no applicability, however, to the Balancing Authority in the proposed version 2 of EOP-005 standard. In EOP-005-1 R11.3, for example, the Balancing Authorities are specifically assigned the responsibility of reviewing Interchange Schedules between BA's or fragments of BA Areas within the separated area and make adjustments to facilitate the restoration using manual or automatic generation control. Many Transmission Operators do not normally have the training or experience to manage issues that are normally the responsibility of Balancing Authority – frequency control, generation-load balancing, operating reserves and, most particularly, interchange. In many cases, the Transmission Operator also does not have the tools/mechanisms such as AGC and Scheduling software to perform these functions. System collapse/blackout/islanding will not necessarily take place along Transmission Operator boundaries and therefore the participation of affected Balancing Area is critical for a successful restoration process. In R5, the Transmission Operator is expected to resynchronize islanded Areas with neighboring areas with approval from the RC but no mention is made of the BA's participation and responsibilities in the resulting interconnection – or perhaps a new "cross-BA" island - of Balancing Areas. If the Drafting Team continues to believe that the BA should not be included at all in this version of the standard, at a minimum, the Drafting Team should consider adding a requirement to the TOP restoration plan to require that the restoration plan includes criteria for deciding when the TOP will transfer frequency control and generation/load balancing back to the Balancing Authority (i.e. when does a restoration process end and normal operation start taking back over). Even if, the BA is made an applicable entity, the Drafting team might still consider this transition to "normal" as a necessary part of the TOP restoration plan

2. The use of the term "operating procedures" used in R1.6 needs to be defined. Although the same term was used in Attachment 1 of EPO-005-1, continuing to use an ambiguous term moving forward should not be overlooked by the Drafting Team. Typically an Operating Procedure involves a specific set of actions (e.g. switching, generation dispatch, etc.). To create such detailed procedures, there needs to be some valid assumptions/criteria that the actions in the procedures are established against. Requirement R1.6, for example, requires such operating procedures for re-establishing connections for areas in the TOP's area that have become separated. Since such areas can not all be predetermined for all restoration situations that might occur, the requirement as written leaves the TOP open for always being in non-compliance since operating procedures for all perturbations of area boundaries is not feasible. Perhaps "operating procedures" needs to be more clearly defined to be less prescriptive (e.g. switching sequences) and more generic (i.e., issues to be considered such as synching locations, resulting reserves to be maintained, resulting frequency control, etc.) than is normally used for the term. In addition, the scope/wording of the 1.6 requirement

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

needs to be clarified to reflect more generic plans than might currently be interpreted from the proposed wording.

3. Requirement 3 as written implies that every five years the restoration plan is verified by the methods listed that it accomplishes its intended function. Although the items listed in R3.1-R3.3 are called out as being included in the testing, R3 does not limit the verification to these alone and would thus imply that all items in the plans should be verified - including items such as those listed in R1.6 and 1.7. From a practical standpoint it is unclear how this would reasonably be accomplished. Also, the wording of R3.2 and R3.3 makes it unclear what is to be done with the loads referred to when the simulation or testing takes place.

4. If the Balancing Authority continues to be left out of the Standards as an applicable entity during Restoration, the training required in R9 should also include TOP training in the concepts of frequency control, operating reserves, and perhaps even ACE control if reconnection to the Interconnection is performed and the BA is not involved. It is agreed that R1.8 requires the TOP to coordinate its plan with the BA but there is no requirement or obligation for the BA to take an active role in the TOP's plan. The TOP's plan may say it does everything without the BA and there is nothing in the Standards to prevent this even though it is outside the TOP role in the Functional model.

5. In Requirement 1.5 of EOP-005-2 and Requirement 1.6 of EOP-006-2 we note the use of the un-defined term "professional judgement." The drafting team might consider replacing this ambiguous term with language similar to that found in Requirement 1 of Reliability Standard TOP-001-1. While we also note Requirements 1.5 (EOP-005-2) and 1.6 (EOP-006-2) are intended for inclusion in the restoration plan, we recommend the drafting team re-consider the need for this element in the restoration plan as it is covered in the TOP-001-1 Standard.

Finally, we commend the System Restoration and Blackstart Drafting Team for its excellent work on the System Restoration and Blackstart Standards -- Project 2006-03. We appreciate the opportunity provided by the drafting team to submit comments on a matter of such importance to the industry.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: We would like to know in which standard(s) a partial shutdown is covered.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: FERC Order 693 assumes that switchmen and generator operators are acting independently, which is incorrect. They are always under the direction and operating authority of an entity's control room. We do not believe this additional training requirement for switchmen and generator operators is necessary as they are already trained on how to switch equipment under adverse conditions (storm restoration, loss of DC, etc.) or on how to start and synchronize a unit.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: We agree with the definition.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

None

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

None

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments:

General Comments

We would like clarification of the word annual: Does it mean every twelve months or once per calendar year?

Ample time should be given to implement the changes following BOT approval of the standards; we suggest 18 months to allow for revisions, coordination, and approval.

Comments on Standard EOP-005-2

R1 - We believe the second sentence should read "The restoration plan shall have a priority of restoring the integrity of the Interconnection in conjunction with the Reliability Coordinator" instead of "under the direction of the Reliability Coordinator" to coincide with wording in EOP-006-2 R4.

R1.2.1 - The requirement to include Blackstart Resource test dates and results in the restoration plans would require Transmission Operators to update their restoration plan as often as a Blackstart Unit is tested. We believe this creates an unnecessary amount of work to both the TO and the Reliability Coordinator, as they will have to approve or deny each revision of the plan.

R1.5 - We suggest removing this requirement because it has no substance.

R4 - We believe the requirement should be reworded to reflect that TOs should coordinate implementing their restoration plans with their RC. We suggest the following wording: "Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, each affected Transmission Operators shall implement its restoration plan by: R4.1 Working in conjunction with its Reliability Coordinator(s) to determine the extent and condition of the isolated area(s). R4.2. Giving high priority to restoration of off-site power to nuclear stations. R4.3. Notifying its Reliability Coordinator of restoration progress as required in the Reliability Coordinator's restoration plan.

M3 - We believe the data storage requirement for this measure is excessive.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments on Standard EOP-006-2

R1.6 - We suggest removing this requirement because it has no substance.

R2.2 - We suggest rewording the requirement to state the following as clarification:

"The Reliability Coordinator shall approve or deny the Transmission Operator's submitted restoration plan within ninety days."

R5 - We suggest rewording this requirement to the following: "The Reliability Coordinator shall authorize and coordinate re-synchronizing between isolated neighboring areas." to coincide with EOP-005-2 R5.

R6 - We suggest rewording this requirement to the following: "The Reliability Coordinator shall serve as the primary contact for disseminating information regarding restoration to neighboring Reliability Coordinators, Transmission Operators, and Balancing Authorities within its Reliability Coordinator Area."

R7 - We believe the provided training for the Reliability Coordinator should also include Restoration Priorities, Synchronizing, and Review of the restoration plan to coincide with the training for the TO in EOP-005-2 R9.

R8 - This requirement should be reworded to state that the Reliability Coordinator should request each Transmission Operator and Generator Operator participate at least every two years to make it consistent with R11 and R16 in EOP-005-2.

M3 - We believe that this measure should be reworded to the following: "Each Reliability Coordinator shall provide evidence, such as a written approval letter, that it has reviewed its Transmission Operator's submitted restoration plan(s) in accordance with Requirement R2."

M5 - "A Disturbance" in this measure should be qualified as "A Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the System to service."

M7 - "A Disturbance" in this measure should be qualified as "A Disturbance in which Blackstart Resources have been utilized in restoring the shut down area of the System to service."

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Walter E. Joly	
Organization:	Tennessee Valley Authority	
Telephone:	423-751-6264	
E-mail:	wejoly@tva.gov	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input checked="" type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input checked="" type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: It would be helpful to have more insight from the drafting team about the scope of training to be required. Perhaps an attachment to the standard should be added to clarify the training objectives. On initial impression, the 2/4 hr annual training requirement for Operators seems excessive. It would appear that this training should be able to be incorporated into existing operator training programs already in place.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: Yes

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: RC should not "approve" the TOP plan. RC should review and provide technical comments to the TOP. TOP should be required to respond to RC written



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

technical comments similar to the process in FAC-008-1 R2 for ratings. RC should not be a position of being liable for having "approved" the TOP plan EOP-005-2 R1 and EOP-006-2 R1 should be reworded to remove "approval".

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

None.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

None

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: Regarding Drills perhaps the SDT could clarify requirements for drills and what constitutes a drill. There appears to be potential inconsistency in requirements for Blackstart Resource participation in Restoration Drills once every two years while requiring Blackstart tests once every three years. In addition, requiring two Restoration Drills per year seems excessive.

1. BA's must be included in: Plan development, Training and drills, communication and coordination during restoration and connection with neighboring areas.

2. Field personnel and generation operators training requirements in this Standard appear duplicative. Field personnel switch elements under similar conditions such as storm restoration. Generator operators that test black start facilities have the operational training related to their role in restoration.



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Karl Bryan	
Organization:	US Army Corps of Engineers	
Telephone:	503-808-3894	
E-mail:	karl.a.bryan@usace.army.mil	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input checked="" type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: I am glad that finally there is a requirement for generator operators to be trained on black start restoration in addition to the requirement for testing of black starting of a generator. For all of the generators in my Division that are listed as black start resources, I require each operator to perform black start operations annually. I do this so that when a need arises to perform black starting, the operator on shift is fully trained in black starting a generator. The required 4 hours of training will give the operators a better idea of what the power system needs are surrounding black starting.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: I fully agree with this term. All of my hydropower generating facilities are capable of black starting the powerhouse. This is done as part of the dam safety and flood response requirements. This does not mean all hydrogenerators can black start a transmissionline, it means that they can operate as a system generation resource during a black start event. Reconstruction of the transmission system starts with black starting lines, but having additional generation that can synch to the line will aide in how quickly large blocks of load can be picked up. So you may also want to define generation that is capable of starting or staying operational during a major system disturbance but is not

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

capable of picking up the heavy reactive loads necessary to black start a transmissionline.

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: Documentation of coordination is one of the things that has been missing in previous system restoration plans.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

Federal Entities with power or transmission assets are not allowed to take direction from non-Federal entities. This problem applies to many of the Rel Stndrds and needs to be cleared up at a legislative level in order for the Rel Stndrds to be fully complied with.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: I am especially pleased that generator operators now have to be coordinated with prior to listing their generators as a black start resource. In the past, it was after the fact that the generator owner was informed that their





NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region (check all Regions in which your company operates)		Registered Ballot Body Segment (check all industry segments in which your company is registered)
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 – Transmission-dependent Utilities
<input type="checkbox"/> RFC	<input type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 – Large Electricity End Users
<input checked="" type="checkbox"/> WECC	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> NA – Not Applicable	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input checked="" type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

Group Comments (Complete this page if comments are from a group.)

**Group Name:** WECC Operations Training Subcommittee (OTS)

**Lead Contact:** Lauri Jones

**Contact Organization:** PG&E

**Contact Segment:** 10

**Contact Telephone:** 415-973-0918

**Contact E-mail:** LLJ8@pge.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Eric Hudson	CAISO	WECC	10
Brian Tuck	BPA	WECC	10
Ken Driggs	WECC	WECC	10
Rod Byrnell	BCTC	WECC	10
Richard Krajewski	PNM	WECC	10
Hank LaBean	DOPD	WECC	10
George Noller	SCE	WECC	10
Dick Schwarz	PNSC	WECC	10
Jon Crook	SMUD	WECC	10
Rick Brock	PSC	WECC	10
Warren Maxvill	AVA	WECC	10
Eric Langhorst	WECC	WECC	10
Robert Eubank	TSGT	WECC	10
Ron Verraneault	PAC	WECC	10
Bruce Fauvelle	AESO	WECC	10

\*If more than one Region or Segment applies, please list all that apply. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: WECC OTS agrees that including training for generator operators and field switching personnel associated with restoration complies with the intent of FERC Order 693, with states "System restoration requires the participation of not only control room personnel but also those outside of the control room. These include blackstart unit operators and field switching operators in situations where SCADA capability is unavailable. As such, the Commission believes that inclusion of periodic system restoration drills and training and review of restoration plans in a system restoration Reliability Standard is the most effective way of achieving the desired goal of ensuring that all participants are trained in system restoration and that the restoration plans are up to date to deal with system changes."

However, the training required in EOP-005-2 R10 and R15 are missing the words "where SCADA capability is unavailable". The wording in R10 and R15 are also not clear who exactly is required to be involved in this required training. The OTS recommends adding the words "where SCADA capability is unavailable" and clearly defines 'those outside of the control room' that would require training so it is not mis-interpreted and can be properly measured.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments: However, the OTS is unclear on the time frame for the Reliability Coordinator training and does not think it is well defined. Would this training be an annual requirement for the RC's or would the training fall on the RRO on how often they train each RC?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The WECC OTS is the principle group in the Western Interconnection to support the WECC training program and providing support to the trainers in the West. It is the OTS belief that quality training can and should result in quality System Operators and improved system reliability and therefore, we are supportive of the effort by the drafting team for their efforts to ensure the system operator responsible for the BES meets a minimum competency and knowledge levels. Quality training requires analysis and process and the OTS supports a requirement for development, delivery, and evaluation of system operator training. The OTS has several questions concerning the lack of clarity for the training requirements.

EOP-005-1 had a requirement to periodically test telecommunication facilities that are required to implement a blackstart plan. Is this covered in another Standard or has it been eliminated and is not required?

New training for personnel outside the Control Room has been identified as an annual requirement but the existing words in EOP-005 for Transmission Operator Control Room personnel and EOP-007 for Reliability Coordinators Control Room personnel does not detail the training requirement as an annual requirement. Were all the training requirements listed in the Standards meant to be an annual requirement?

EOP-005-2 R1.7 and R4.2 only lists nuclear stations for high priority of off-site power. Suggest also listing thermal stations where an area may not have nuclear resources and the Thermal stations require off site power to maintain their ability to come back on line quickly.

EOP-005-2 R.9 states each Transmission Operator shall provide training and even lists the training program topics; it does not give a time frame for this training. Is this training to be annually, if so, it should state it? Also, isn't the existing emergency operations topics training program PER-002 and wouldn't this be a duplicate criteria for the new PER-005-1 System Personnel training?

Training requirements in EOP-005-2 R.11 needs to be clearly defined for the Transmission Operator. Will this be annual training per operator or only upon request of the Reliability Coordinator?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

The WECC OTS finds the new System Restoration and Blackstart-Coordination Standards to be duplicating in their training requirements and not well defined in the time frames for this training. The OTS has also identified several training specific needs in other NERC Standards and would like to recommend that all training requirements in the current NERC Standards and future Standards only be identified in the NERC System Personnel Training Standard. While it is necessary to mention in the various standards, training needs per that standard, specific training requirements should be found in one standard, not amongst eighty or more. This allows the training staff responsible for the training compliance measures to coordinate and provide training for all future and current training needs.

## Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
		1 — Transmission Owners
		2 — RTOs and 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 and Regional Entities





## **Background Information**

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

•

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments: While the WECC RCCWG has no problem with moving attachment 1 into the standard, we have concerns with R1 which states:

“Each Transmission Operator shall have a restoration plan approved by its Reliability Coordinator to restore its System to its normal state following an event that requires the utilization of Blackstart Resources. The restoration plan shall have a priority of restoring the integrity of the Interconnection under the direction of the Reliability Coordinator.”

The group questions what the criteria for “approval” by the RC are. If situations are encountered during a restoration event that are not covered in the restoration plan, are the RC and TOP in violation of the standard?

The WECC RCCWG request clarification of the phrase “normal state”. Does this refer to interconnected operation? If a TOP has a single tie and that tie experiences damage that will require a year to repair are the RC and TOP in violation of the standard?

The WECC RCCWG agrees that RC and TOP need restoration plans, but believes the plans cannot be drafted to cover every possible scenario.

The WECC RCCWG believes that the phrase “under the direction of the Reliability Coordinator should be removed. The Reliability Coordinator coordinates with the TOP, but does not direct the TOP what specific steps need to be taken. The Reliability Coordinator needs to allow the Transmission Operator to direct his own portion of a restoration. When there are islands to be synchronized, or reconnected to the interconnection, the Reliability Coordinator is in a position to “direct” (approve) action. Otherwise, the Reliability Coordinator should be coordinating with Transmission Operators.

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments:

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: Training should be addressed in the PER standards. In addition to that comment, the WECC RCCWG feels that a standard that is applicable to Reliability Coordinators only is not the place for training requirements for generator operators and field switching personnel. Training for all switchmen is confusing as the term switchmen is not defined and varies by locality.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

Comments: We suggest you remove the words "under the control of the Generator Operator" from the definition, leaving the definition "A generation Facility and set of equipment with the basic ability to start itself without support from the System or to automatically remain energized without connection to the remainder of the System, with the ability to energize a dead bus, and meeting the Transmission Operator's restoration plan needs for real and reactive power capability."

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

•

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

• No

•

8. If you are aware of any conflicts between the proposed standards and any

regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

- There are no conflicts that we are aware of.
  -
9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: R1.6 requires "A statement indicating that in situations where the actual conditions do not match the studied conditions, the System Operator shall use professional judgment to modify the System restoration plan." This standard is only applicable to the Reliability Coordinator. The WECC RCCWG requests removal of requirements for other entities.

The WECC RCCWG believes that R2 needs to state criteria for approval or disapproval of Transmission Operator restoration plans. The WECC RCCWG believes that a 2009/2010 implementation to meet this requirement and the coordination requirement in R1 will allow the necessary time to budgeting additional staff required.

R2.2: The TOP should not be required to certify annually to the RC that the plan has been reviewed. This should be done through the ERO self certification process.

The WECC RCCWG believes that R2.2 should be increased from 30 days to 60 days.

The WECC RCCWG believes that R6 should be reworded to indicate that "The Reliability Coordinator shall serve as the primary contact for disseminating information regarding restoration to those parties not immediately involved in the restoration process. The Reliability Coordinator should not be placed in a position to interfere with, or be placed as another communication link to, direct communication between entities immediately involved.

The WECC RCCWG requests clarification of the phrase "control room personnel" in R7. Who does that term refer to? As this standard is applicable to the Reliability Coordinator, we suggest changing that wording to "Reliability Coordinator identified in the restoration plan". Furthermore, this training requirement should be moved to a PER standard, such as PER-005-R3.

R8 would require two System restoration drills, exercises, or simulations per year. The WECC RCCWG feels a requirement for one such drill, exercise, or simulation per year is sufficient, while two is excessive. The WECC RCCWG feels that this training requirement should be part of PER-005-R3 and should not be part of this standard, which is not a training standard.

R15.3. Restoration priorities. It is not clear who determines priorities.

**Comment Form for 1st Draft of Standards for System Restoration and Blackstart (Project 2006-03)**

Please use this form to submit comments on the 1<sup>st</sup> draft of the standards for System Restoration and Blackstart (Project 2006-03). Comments must be submitted by **September 28, 2007**. Please submit the completed form by e-mail to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) with the words "SRB Standards" in the subject line. If you have questions please contact Ed Dobrowolski at [Ed.Dobrowolski@nerc.net](mailto:Ed.Dobrowolski@nerc.net) or by telephone at 609-947-3673.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Howard Rulf	
Organization:	We Energies	
Telephone:	262-574-6046	
E-mail:	Howard.Rulf@we-energies.com	
<b>NERC Region</b> (check all Regions in which your company operates)		<b>Registered Ballot Body Segment</b> (check all industry segments in which your company is registered)
<input type="checkbox"/> <b>ERCOT</b>	<input type="checkbox"/>	1 – Transmission Owners
<input type="checkbox"/> <b>FRCC</b>	<input type="checkbox"/>	2 – RTOs and ISOs
<input type="checkbox"/> <b>MRO</b>	<input checked="" type="checkbox"/>	3 – Load-serving Entities
<input type="checkbox"/> <b>NPCC</b>	<input checked="" type="checkbox"/>	4 – Transmission-dependent Utilities
<input checked="" type="checkbox"/> <b>RFC</b>	<input checked="" type="checkbox"/>	5 – Electric Generators
<input type="checkbox"/> <b>SERC</b>	<input type="checkbox"/>	6 – Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> <b>SPP</b>	<input type="checkbox"/>	7 – Large Electricity End Users
<input type="checkbox"/> <b>WECC</b>	<input type="checkbox"/>	8 – Small Electricity End Users
<input type="checkbox"/> <b>NA – Not Applicable</b>	<input type="checkbox"/>	9 – Federal, State, Provincial Regulatory or other Government Entities
	<input type="checkbox"/>	10 – Regional Reliability Organizations and Regional Entities



## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### Background Information

The System Restoration and Blackstart Standard Drafting Team (SRB SDT) has made significant changes from the currently approved standards related to System Restoration and Blackstart. While the SRB SDT has considered the comments submitted in prior review periods during NERC's transition to the ERO and those from the SAR stage, particular attention has been given to the recommendations made in FERC Order 693.

The Elements for Consideration of Attachment 1 of EOP-005 have been transformed into sub-requirements of R1 in the standard itself. Attachment 1 is eliminated. Requirements regarding telecommunications systems have been eliminated as duplicative of requirements in COM standards. The requirements of EOP-009 – Blackstart testing – have been moved to EOP-005 and EOP-009 is eliminated. Training requirements are added for Transmission Operator field switching personnel and for operating personnel of Generator Operators with a Blackstart Resource Facility Plan (a newly defined term).

The SRB SDT has eliminated EOP-007 which delegates duties to the Regional Reliability Organization and put new requirements into ERO-006 for the Reliability Coordinator that functionally replace the Regional Reliability Organization requirements. The RRO Blackstart Capability Plan has been eliminated and the Reliability Coordinator has a requirement for a restoration plan to coordinate the Transmission Operator plans for its Reliability Coordinator Area. The Reliability Coordinator approves or makes recommendations for improvement of Transmission Operator restoration plans in its Reliability Coordinator Area.

The draft standards EOP-005-2 and EOP-006-2 should be reviewed as a set when providing comments.

Please review the standards, provide your comments on this form, and then e-mail the form to [sarcomm@nerc.net](mailto:sarcomm@nerc.net) by **September 28, 2007** with the words, "SRB Standards" in the subject line.



**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

*Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.*

1. Attachment 1 of EOP-005-1 has been eliminated and the elements for consideration moved directly into Requirement R1 and the sub-requirements of R1 in EOP-005-2. Do you agree or have other suggestions as to how to incorporate the elements into the standards?

Yes

No

Comments:

2. The SRB SDT has removed the language for partial shutdown as part of restoration as we consider recovery from partial shutdown as normal operations. We believe that this requirement is covered in other standards and this standard only applies to those situations where you need to apply Blackstart Resources. Do you agree or have other suggestions as to how to handle partial shutdowns?

Yes

No

Comments: The major impetus for restructuring the entire industry, especially from the regulatory perspective, is the partial shutdown that occurred on August 14, 2003. Anyone participating in that restoration effort would likely not describe the efforts as normal operations. Suggest that the term restoration apply any time resynchronizing is required to restore the interconnected system to whole.

3. The SRB SDT has included training for generator operators and field switching personnel associated with restoration in EOP-005 in accordance with FERC Order 693. Do you agree or have other suggestions for how to supply such training?

Yes

No

Comments: We disagree with the training requirements for field switching personnel and Generator Operators.

For the field switching, there is no value added by requiring the training. Field personnel routinely switch under adverse conditions related to storm recovery and equipment damage.

The GO is the entity testing units for Black Start capability for compliance to NERC and Regional Entity Standards. The training required in the proposed standards is redundant. The GO does not determine restoration philosophy. Restoration priorities are not the purview of the GO.

4. The SRB SDT defined a new term, Blackstart Resource, which allows for greater flexibility in providing resources for blackstart operations. Do you agree with this definition?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

Comments:

5. The SRB SDT has merged the RRO requirements in EOP-007 into EOP-006 and assigned them to the Reliability Coordinator. Do you agree with this change?

Yes

No

Comments:

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

6. The SRB SDT has replaced the existing Blackstart Capability Plan (and retired the definition) with the Reliability Coordinator's requirement for a coordination element in their restoration plan. Do you agree with this approach or do you have other suggestions for how to handle this?

Yes

No

Comments:

7. If you are aware of any regional variances that would be required as a result of these standards, please identify them here.

8. If you are aware of any conflicts between the proposed standards and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, please identify them here.

9. If you have any other comments on the proposed standards that you haven't already provided in response to the questions above, please provide them here.

Comments: The standards appear to be drafted from the perspective of a vertically integrated utility, not in terms of the NERC functional model entities. The conspicuous absence of the NERC functional entity "Balancing Authority" in both EOP-005-2 and EOP-006-2 produces doubt as to the value of the standards. The BA should be intimately involved in all aspects of the system restoration plan and the execution thereof.

The argument that the BA role is prescribed for all operating conditions in the Balancing Authority standards is fallacious. Below are extracts from BAL-001 through BAL-006 with comments regarding the applicability during the restoration process.

A. Introduction

1. Title: Real Power Balancing Control Performance

2. Number: BAL-001-0

3. Purpose: To maintain Interconnection steady-state frequency within defined limits by balancing real power demand and supply in real-time.

4. Applicability:

4.1. Balancing Authorities

5. Effective Date: April 1, 2005

The purview of BAL-001 is limited to interconnection steady state frequency, and does not pertain to island frequency during system restoration efforts. During island scenarios ACE is irrelevant as are the control performance criteria – the frequencies of the various islands will not be equal and there will be no scheduled interchange.

EOP-005 R1.4 requires identification of acceptable operating frequency limits during restoration efforts. R3.3 further requires that frequency be controlled within dynamic limits documented in R1.4. Since BAL-001 does not apply to restoration scenarios, and the Balancing Authority is responsible for maintaining frequency, the NERC functional entity "Balancing Authority" should be included in the EOP-005-2 standard.

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

### A. Introduction

1. Title: Disturbance Control Performance

2. Number: BAL-002-0

3. Purpose:

The purpose of the Disturbance Control Standard (DCS) is to ensure the Balancing Authority is able to utilize its Contingency Reserve to balance resources and demand and return Interconnection frequency within defined limits following a Reportable Disturbance. Because

generator failures are far more common than significant losses of load and because Contingency Reserve activation does not typically apply to the loss of load, the application of

DCS is limited to the loss of supply and does not apply to the loss of load.

4. Applicability:

4.1. Balancing Authorities

4.2. Reserve Sharing Groups (Balancing Authorities may meet the requirements of Standard 002 through participation in a Reserve Sharing Group.)

4.3. Regional Reliability Organizations

5. Effective Date: April 1, 2005

Again, interconnection frequency has no meaning in an island scenario.

### A. Introduction

1. Title: Frequency Response and Bias

2. Number: BAL-003-0

3. Purpose:

This standard provides a consistent method for calculating the Frequency Bias component of ACE.

4. Applicability:

4.1. Balancing Authorities

5. Effective Date: April 1, 2005

During island scenarios, ACE is irrelevant.

### A. Introduction

1. Title: Time Error Correction

2. Number: BAL-004-0

3. Purpose:

The purpose of this standard is to ensure that Time Error Corrections are conducted in a manner that does not adversely affect the reliability of the Interconnection.

4. Applicability:

4.1. Reliability Coordinators

4.2. Balancing Authorities

5. Effective Date: April 1, 2005

No RC will initiate a Time Error Correction during island scenarios.

### A. Introduction

1. Title: Automatic Generation Control

2. Number: BAL-005-0

3. Purpose:

## Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart (Project 2006-03)

---

This standard establishes requirements for Balancing Authority Automatic Generation Control

(AGC) necessary to calculate Area Control Error (ACE) and to routinely deploy the Regulating Reserve. The standard also ensures that all facilities and load electrically synchronized to the Interconnection are included within the metered boundary of a Balancing

Area so that balancing of resources and demand can be achieved.

4. Applicability:

4.1. Balancing Authorities

4.2. Generator Operators

4.3. Transmission Operators

4.4. Load Serving Entities

5. Effective Date: April 1, 2005

AGC will be useless until system conditions are near to normal interconnection status.

A. Introduction

1. Title: Inadvertent Interchange

2. Number: BAL-006-1

3. Purpose:

This standard defines a process for monitoring Balancing Authorities to ensure that, over the

long term, Balancing Authority Areas do not excessively depend on other Balancing Authority

Areas in the Interconnection for meeting their demand or Interchange obligations.

4. Applicability:

4.1. Balancing Authorities.

5. Effective Date: May 1, 2006

There will be no inadvertent flows out from or into an island.

In summary, the existing NERC Balancing Authority Standards BAL-001 through BAL-006 do not apply during system restoration efforts. Further, the proposed standards EOP-005-2 and EOP-006-2 do not address the operations of the Balancing Authority during system restoration events.

Comments specific to EOP-005

No training is specified for the BA system operators. The system restoration scenario is very unique and challenging in terms of balancing resources to load. Load behavior will be very dynamic – cold load pick up and loss of diversity will be significant factors during the restoration process. Since the BA is ultimately responsible for balancing under all conditions, it is imperative for the BA to be involved in the training for restoration and the implementation during an event.

The LSE has no involvement here. I see some value including the LSE in terms of load used as a tool. What load profiles are expected? What impact does that have on the generation and island frequency?

R1.4 – Specifies voltage and frequency limits. Without the BA involvement, how do you control frequency? Who determines the frequency limits? The BAL Standards apply for normal operations with bias control, but system restoration scenarios are totally different.

R3.3 – What is meant by Dynamic Limits? During system restoration is stability in the usual sense attainable?

**Comment Form for 1<sup>st</sup> Draft of Standards for System Restoration and Blackstart  
(Project 2006-03)**

---

R10 – Why the 2 hour training requirement for “all field personnel?” Not sure there is any added value here. And if there is a training requirement, should it be in the Personnel Standards?

R15 – Is this a GO item? The GO does not determine restoration philosophy. Restoration priorities are not the purview of the GO. Who sponsors this training? What qualifies as acceptable?

EOP-006

R4 – Sounds good up to the part stating “. . . and take actions to restore the Bulk Electric System frequency to normal. Such actions would consider but not be limited to: adjusting generation, placing generation on line, or shedding load.” I suspect that the RC will not have sufficient infrastructure to monitor frequencies in each island that could potentially form, much less track and react to the information. Based on the exercises conducted with our TO, it will be a significant chore for the system control operators building the islands to maintain frequency and voltage to specified bounds within that island. Once there is a “Bulk Electric System frequency,” then the RC might be more active.

The list of actions should include opening circuits to save part of the “interconnect” in the event flows dictate.

R5 – Need to bring the BA function in here (the standard is applicable only to the RC). This will be particularly important if there is more than a single BA involved. Tie line flow control will dictate whether AGC control is desirable.