

## Standard EOP-004-~~10~~ — Disturbance Reporting

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### A. ~~3.~~ Introduction

1. **Title:** **Disturbance Reporting**
2. **Number:** EOP-004-~~10~~
3. **Purpose:** Disturbances or unusual occurrences that jeopardize the operation of the Bulk Electric System, or result in system equipment damage or customer interruptions, need to be studied and understood to minimize the likelihood of similar events in the future.
4. **Applicability**
  - 4.1. Reliability Coordinators.
  - 4.2. Balancing Authorities.
  - 4.3. Transmission Operators.
  - 4.4. Generator Operators.
  - 4.5. Load Serving Entities.
  - 4.6. Regional Reliability Organizations.
5. **Effective Date:** Thirty days after Board of Trustee approval, April 1, 2005

### B. Requirements

- R1. Each Regional Reliability Organization shall establish and maintain a Regional reporting procedure to facilitate preparation of preliminary and final disturbance reports.
- R2. A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall promptly analyze Bulk Electric System disturbances on its system or facilities.
- R3. A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity experiencing a reportable incident shall provide a preliminary written report to its Regional Reliability Organization and NERC.

~~R3.1.~~ The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall submit within 24 hours of the disturbance or unusual occurrence either a copy of the report submitted to the Department of Energy (DOE), or, if no DOE report is required, a copy of the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report form. Events that are not identified until some time after they occur shall be reported within 24 hours of being recognized.

~~R3.2.~~R3.1. ~~The Applicable reporting forms are is~~ provided in Attachments 1-EOP-004-~~0~~ and 2-EOP-004-~~0~~.

~~R3.3.~~R3.2. Under certain adverse conditions, e.g., severe weather, it may not be possible to assess the damage caused by a disturbance and issue a written Interconnection Reliability Operating Limit and Preliminary Disturbance Report within 24 hours. In such cases, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall promptly notify its Regional Reliability Organization(s) and NERC, and verbally provide as much information as is available at that time. The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall then provide timely, periodic verbal updates until adequate information is available to issue a written Preliminary Disturbance Report.

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**R3.4.R3.3.** If, in the judgment of the Regional Reliability Organization, after consultation with the Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity in which a disturbance occurred, a final report is required, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall prepare this report within 60 days. As a minimum, the final report shall have a discussion of the events and its cause, the conclusions reached, and recommendations to prevent recurrence of this type of event. The report shall be subject to Regional Reliability Organization approval.

- R4.** When a Bulk Electric System disturbance occurs, the Regional Reliability Organization shall make its representatives on the NERC Operating Committee and Disturbance Analysis Working Group available to the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity immediately affected by the disturbance for the purpose of providing any needed assistance in the investigation and to assist in the preparation of a final report.
- R5.** The Regional Reliability Organization shall track and review the status of all final report recommendations at least twice each year to ensure they are being acted upon in a timely manner. If any recommendation has not been acted on within two years, or if Regional Reliability Organization tracking and review indicates at any time that any recommendation is not being acted on with sufficient diligence, the Regional Reliability Organization shall notify the NERC Planning Committee and Operating Committee of the status of the recommendation(s) and the steps the Regional Reliability Organization has taken to accelerate implementation.

### C. Measures

Not specified.

### D. Compliance

Not specified.

### E. Regional Differences

None identified.

### Version History

| Version       | Date                      | Action  | Change Tracking   |
|---------------|---------------------------|---|-------------------|
| 0             | April 1, 2005             | Effective Date  | New               |
| 0             | May 23, 2005              | Fixed reference to attachments 1-EOP-004-0 and 2-EOP-004-0, Changed chart title 1-FAC-004-0 to 1-EOP-004-0, Fixed title of Table 1 to read 1-EOP-004-0, and fixed font. | Errata            |
| 0             | July 6, 2005              | Fixed email in Attachment 1-EOP-004-0 from <a href="mailto:info@nerc.com">info@nerc.com</a> to <a href="mailto:esisac@nerc.com">esisac@nerc.com</a> .                   | Errata            |
| 0             | July 26, 2005             | Fixed Header on page 8 to read EOP-004-0  | Errata            |
| <del>0</del>  | <del>August 8, 2005</del> | <del>Removed "Proposed" from Effective Date</del>   | <del>Errata</del> |
| <del>10</del> | <del>August 8, 2005</del> | <del>Removed DOE OE-417 (fmr EIA-417)Removed "Proposed" from Effective Date</del>   | <del>Errata</del> |

**Attachment 1-EOP-004-10  
NERC Disturbance Report Form**

**Introduction**

These disturbance reporting requirements apply to all Reliability Coordinators, Balancing Authorities, Transmission Operators, Generator Operators, and Load Serving Entities, and provide a common basis for all NERC disturbance reporting. The entity on whose system a reportable disturbance occurs shall notify NERC and its Regional Reliability Organization of the disturbance using the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report forms. Reports can be sent to NERC via email ([esisac@nerc.com](mailto:esisac@nerc.com)) by facsimile (609-452-9550) using the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report forms. If a disturbance is to be reported to the U.S. Department of Energy also, the responding entity may use the DOE reporting form when reporting to NERC. Note: All ~~Electric Emergency Incident and Disturbance Reports (Schedules 1 and 2)~~ sent to DOE shall be simultaneously sent to NERC, preferably electronically at [esisac@nerc.com](mailto:esisac@nerc.com).

The NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Reports are to be made for any of the following events:

1. The loss of a bulk power transmission component that significantly affects the integrity of interconnected system operations. Generally, a disturbance report will be required if the event results in actions such as:
  - a. Modification of operating procedures.
  - b. Modification of equipment (e.g. control systems or special protection systems) to prevent reoccurrence of the event.
  - c. Identification of valuable lessons learned.
  - d. Identification of non-compliance with NERC standards or policies.
  - e. Identification of a disturbance that is beyond recognized criteria, i.e. three-phase fault with breaker failure, etc.
  - f. Frequency or voltage going below the under-frequency or under-voltage load shed points.
2. The occurrence of an interconnected system separation or system islanding or both.
3. Loss of generation by a Generator Operator, Balancing Authority, or Load-Serving Entity — 2,000 MW or more in the Eastern Interconnection or Western Interconnection and 1,000 MW or more in the ERCOT Interconnection.
4. Equipment failures/system operational actions which result in the loss of firm system demands for more than 15 minutes, as described below:
  - a. Entities with a previous year recorded peak demand of more than 3,000 MW are required to report all such losses of firm demands totaling more than 300 MW.
  - b. All other entities are required to report all such losses of firm demands totaling more than 200 MW or 50% of the total customers being supplied immediately prior to the incident, whichever is less.
5. Firm load shedding of 100 MW or more to maintain the continuity of the bulk electric system.
6. Any action taken by a Generator Operator, Transmission Operator, Balancing Authority, or Load-Serving Entity that results in:
  - a. Sustained voltage excursions equal to or greater than  $\pm 10\%$ , or
  - b. Major damage to power system components, or
  - c. Failure, degradation, or misoperation of system protection, special protection schemes, remedial action schemes, or other operating systems that do not require operator intervention,

which did result in, or could have resulted in, a system disturbance as defined by steps 1 through 5 above.

7. An Interconnection Reliability Operating Limit (IROL) violation as required in reliability standard TOP-007.
8. Any event that the Operating Committee requests to be submitted to Disturbance Analysis Working Group (DAWG) for review because of the nature of the disturbance and the insight and lessons the electricity supply and delivery industry could learn.

**NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report**

Check here if this is an Interconnection Reliability Operating Limit (IROL) violation report.

|     |   |  |               |
|-----|---|--|---------------|
| 1.  | Organization filing report.   |  |               |
| 2.  | Name of person filing report.   |  |               |
| 3.  | Telephone number.   |  |               |
| 4.  | Date and time of disturbance.<br>Date:(mm/dd/yy)<br>Time/Zone:  |  |               |
| 5.  | Did the disturbance originate in your system?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |               |
| 6.  | Describe disturbance including: cause, equipment damage, critical services interrupted, system separation, key scheduled and actual flows prior to disturbance and in the case of a disturbance involving a special protection or remedial action scheme, what action is being taken to prevent recurrence. |  |               |
| 7.  | Generation tripped.<br>MW Total<br>List generation tripped  |  |               |
| 8.  | Frequency.<br>Just prior to disturbance (Hz):<br>Immediately after disturbance (Hz max.):<br>Immediately after disturbance (Hz min.):   |  |               |
| 9.  | List transmission lines tripped (specify voltage level of each line).   |  |               |
| 10. | Demand tripped (MW):<br>Number of affected Customers:<br>Demand lost (MW-Minutes):  | FIRM   | INTERRUPTIBLE |
|     |   |  |               |
|     |   |  |               |
|     |   |  |               |
| 11. | Restoration time.   | INITIAL  | FINAL         |
|     | Transmission:   |  |               |
|     | Generation:   |  |               |
|     | Demand:   |  |               |

**Attachment 2-EOP-004-0**  
**U.S. Department of Energy Disturbance Reporting Requirements**

**Introduction**

The U.S. Department of Energy (DOE), under its relevant authorities, has established mandatory reporting requirements for electric emergency incidents and disturbances in the United States. DOE collects this information from the electric power industry on Form EIA-417 to meet its overall national security and Federal Energy Management Agency's Federal Response Plan (FRP) responsibilities. DOE will use the data from this form to obtain current information regarding emergency situations on U.S. electric energy supply systems. DOE's Energy Information Administration (EIA) will use the data for reporting on electric power emergency incidents and disturbances in monthly EIA reports. In addition, the data may be used to develop legislative recommendations, reports to the Congress and as a basis for DOE investigations following severe, prolonged, or repeated electric power reliability problems.

Every Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity must use this form to submit mandatory reports of electric power system incidents or disturbances to the DOE Operations Center, which operates on a 24-hour basis, seven days a week. All other entities operating electric systems have filing responsibilities to provide information to the Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity when necessary for their reporting obligations and to file form EIA-417 in cases where these entities will not be involved. EIA requests that it be notified of those that plan to file jointly and of those electric entities that want to file separately.

Special reporting provisions exist for those electric utilities located within the United States, but for whom Reliability Coordinator oversight responsibilities are handled by electrical systems located across an international border. A foreign utility handling U.S. Balancing Authority responsibilities, may wish to file this information voluntarily to the DOE. Any U.S.-based utility in this international situation needs to inform DOE that these filings will come from a foreign-based electric system or file the required reports themselves.

Form EIA-417 must be submitted to the DOE Operations Center if any one of the following applies (see Table 1 EOP-004-0 — Summary of NERC and DOE Reporting Requirements for Major Electric System Emergencies):

- Emergency

- Normal Uncontrolled loss of 300 MW or more of firm system load for more than 15 minutes from a single incident.
- 2. Load shedding of 100 MW or more implemented under emergency operational policy.
- 3. System-wide voltage reductions of 3 percent or more.
- 4. Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system.
- 5. Actual or suspected physical attacks that could impact electric power system adequacy or reliability; or vandalism, which target components of any security system. Actual or suspected cyber or communications attacks that could impact electric power system adequacy or vulnerability.
- 6. Actual or suspected cyber or communications attacks that could impact electric power system adequacy or vulnerability.
- 7. Fuel supply emergencies that could impact electric power system adequacy or reliability.
- 8. Loss of electric service to more than 50,000 customers for one hour or more.
- 9. Complete operational failure or shut-down of the transmission and/or distribution electrical system.

The initial DOE Emergency Incident and Disturbance Report (form EIA-417—Schedule 1) shall be submitted to the DOE Operations Center within 60 minutes of the time of the system disruption.

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~~Complete information may not be available at the time of the disruption. However, provide as much information as is known or suspected at the time of the initial filing. If the incident is having a critical impact on operations, a telephone notification to the DOE Operations Center (202-586-8100) is acceptable, pending submission of the completed form EIA-417. Electronic submission via an on-line web-based form is the preferred method of notification. However, electronic submission by facsimile or email is acceptable.~~

~~An updated form EIA-417 (Schedule 1 Emergency and Normal and 2) is due within 48 hours of the event to provide complete disruption information. Electronic submission via facsimile or email is the preferred method of notification. Detailed DOE Incident and Disturbance reporting requirements can be found at: [http://www.eia.doe.gov/cneaf/electricity/page/form\\_417.html](http://www.eia.doe.gov/cneaf/electricity/page/form_417.html).~~

**Standard EOP-004-10 — Disturbance Reporting**

| <b>Incident No.</b>   | <b>Incident</b>                                      | <b>Threshold</b>  | <b>Report Required</b>      | <b>Time</b>       |
|---|--|---|-----------------------------|-------------------|
| <b>1</b>  | Uncontrolled loss of Firm System Load                | ≥ 300 MW—15 minutes or more   | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>2</b>  | Load Shedding  | ≥ 100 MW under emergency operational policy   | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>3</b>  | Voltage Reductions                                   | 3% or more—applied system wide  | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>4</b>  | Public Appeals                                       | Emergency conditions to reduce demand   | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>5</b>  | Physical sabotage, terrorism or vandalism            | On physical security systems—suspected or real  | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>6</b>  | Cyber sabotage, terrorism or vandalism               | If the attempt is believed to have or did happen  | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>7</b>  | Fuel supply emergencies                              | Fuel inventory or hydro storage levels ≤ 50% of normal  | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>8</b>  | Loss of electric service                             | ≥ 50,000 for 1 hour or more   | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| <b>9</b>  | Complete operation failure of electrical system      | If isolated or interconnected electrical systems suffer total electrical system collapse                            | EIA—Sch 1<br>EIA—Sch 2      | 1 hour<br>48 hour |
| All DOE EIA-417 Schedule 1 reports are to be filed within 60 minutes after the start of an incident or disturbance  |  |   |                             |                   |
| All DOE EIA-417 Schedule 2 reports are to be filed within 48 hours after the start of an incident or disturbance  |  |   |                             |                   |
| <del>OE-417—Schedule 1—Emergency Alert Notice</del>   |  |   |                             |                   |
| <del>OE-417—Schedule 1—Normal Alert</del>   |  |   |                             |                   |
| <i>All entities required to file a DOE EIAOE-417 report (Schedule 1 &amp; 2) shall send a copy of these reports to NERC simultaneously, but no later than 24 hours after the start of the incident or disturbance.</i>  |  |   |                             |                   |
| <b>Incident No.</b>   | <b>Incident</b>                                      | <b>Threshold</b>  | <b>Report Required</b>      | <b>Time</b>       |
| <b>1</b>  | Loss of major system component                       | Significantly affects integrity of interconnected system operations   | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>2</b>  | Interconnected system separation or system islanding | Total system shutdown<br>Partial shutdown, separation, or islanding   | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>3</b>  | Loss of generation                                   | ≥ 2,000—Eastern Interconnection<br>≥ 2,000—Western Interconnection<br>≥ 1,000—ERCOT Interconnection                 | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>4</b>  | Loss of firm load ≥ 15-minutes                       | Entities with peak demand ≥ 3,000: loss ≥ 300 MW<br>All others ≥ 200 MW or 50% of total demand                      | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>5</b>  | Firm load shedding                                   | ≥ 100 MW to maintain continuity of bulk system  | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>6</b>  | System operation or operation actions resulting in:  | • Voltage excursions ≥ 10%<br>• Major damage to system components<br>• Failure, degradation, or misoperation of SPS | NERC Prelim<br>Final report | 24 hour<br>60 day |
| <b>7</b>  | IROL violation                                       | Reliability standard TOP-007.   | NERC Prelim<br>Final report | 72 hour<br>60 day |
| <b>8</b>  | As requested by ORS Chairman                         | Due to nature of disturbance & usefulness to industry (lessons learned)   | NERC Prelim<br>Final report | 24 hour<br>60 day |
| All NERC Operating Security Limit and Preliminary Disturbance reports will be filed within 24 hours after the start of the incident. If an entity must file a DOE EIAOE-417 report on an incident, which requires a NERC Preliminary report, the Entity may use the DOE EIAOE-417 form for both DOE and NERC reports. |  |   |                             |                   |
| <i>Any entity reporting a DOE or NERC incident or disturbance has the responsibility to also notify its Regional Reliability Organization.</i>  |  |   |                             |                   |