

THE LOG

The basis of this document is standardised by the electricity generating companies listed, and will be followed by these parties and amended only after agreement between them. – Enquiries to the Generation Procedures Group, C/o Harvey O'Sullivan Consulting Ltd, PO Box 2328, Wellington

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PREPARATION OF GENERATION PROCEDURES

Generation procedures are prepared by a consensus process involving representatives nominated by major generating companies in NZ, and prominent training providers. These procedures may be derived from existing industry procedures, from established international procedures and practices or may be developed by the Generation Procedures Group itself.

The following companies are represented on the Generation Procedures Group which developed this procedure:

- Contact Energy Ltd
- Genesis Energy Ltd
- Meridian Energy Ltd
- Mighty River Power Ltd
- TrustPower
- The Energy Trainers
- Transpower (Omaka)

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Disclaimer

This document has been prepared by a group of representatives of the electricity industry for the purpose of providing principles on safety and other practices for use by the generation sectors of that industry. It sets out standards considered to be appropriate for the electricity industry; in some instances further procedures will need to be developed in order to implement those standards. Although this document is recommended by industry representatives, it is not legally binding; as such, the industry representatives involved in its development can accept no liability or responsibility for any injury, loss, damage, or any other claims caused by or resulting from any inaccuracy in or incompleteness of the document.

Definitions

Where words that are defined in section 4.0 appear in the text they are in italics.

Changes in This Document

Changes in this document (Issue 3 Rev 1) are summarised below. Where necessary, the full text of a section or clause must be read to understand its meaning.

The document has been reviewed and no changes required, apart from reference to current SM-EI.

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1 PURPOSE

- 1.1 To provide requirements and guidelines for recording operating actions, events and associated information in the documents and electronic files that form the log.

2 POLICY

- 2.1 To ensure a complete record of operating actions and events is maintained, and all operating actions and events within an area of operating responsibility are recorded and timed as they occur.

3 PRINCIPLES

- 3.1 Timed and dated factual records must be kept of operating actions and events in chronological order.
- 3.2 A standard format must be used when making log entries.
- 3.3 The log must indicate any abnormal equipment state and/or power system condition.
- 3.4 The log must provide an audit trail for post fault and/or incident analysis.
- 3.5 The log, whether paper records or computer files, must remain under the control of the operator/controller in charge at the area operating centre, or control centre.
- 3.6 Original records of the log must remain at the station/control centre. Copies may be taken as required.
- 3.7 Compiler(s) of log entries must be identifiable.
- 3.8 Operating terms and abbreviations used must be consistent with industry standards.
- 3.9 Where a boiler of more than 15 HP is being controlled by the operator the logging requirements of the Approved Code of Practice “The Design, Safe Operation, Maintenance and Servicing of Boilers” section 3 shall apply.

4 DEFINITIONS

- 4.1 Definitions used in Safety Manual - Electricity Industry (SM-EI) apply in this document.

5 RESPONSIBILITIES

Operators in control of equipment shall ensure that:

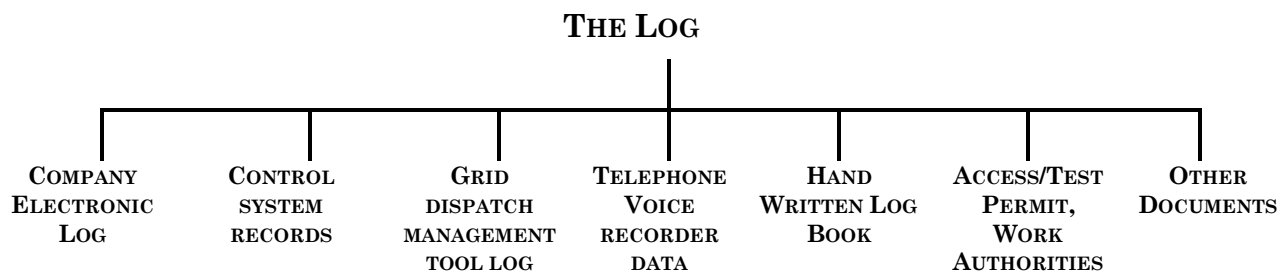
- 5.1 All operational information and instructions for managing transmission services, communications, protection, energy storage, generation and dispatch are correctly recorded in time sequence.
- 5.2 Equipment operating states are recorded after power system changes.
- 5.3 Public related events, incidents and messages reported to the control centre are recorded.

- 5.4 Time sequence records are kept in the log of operating actions, eg:
 - (a) Equipment state changes,
 - (b) Incidents,
 - (c) Changes in the status of Access Permits, Test Permits, Work Authorities and Assurances
- 5.5 Operating information is recorded so that details are clear and legible with only approved abbreviations being used. (Refer to GPG 201 and GPG 202)
- 5.6 Operational documents constituting the log are available on site, and kept secure for the specified retention periods. Copies may be taken as required.
- 5.7 Manual entry log pages are signed as correct at the end of the work period. The person signing must also print their name.

6 CONTENTS OF THE LOG

6.1 Structure

The log structure formed for a station or group of stations is:



See sub-sections
6.2 and 6.3

6.2 Electronic records of operating information for logging purposes

6.2.1 Company electronic log

Generating Companies shall ensure electronic logging systems comply with the requirements of this document.

6.2.2 Control system records

SCADA and control systems logging features such as event summaries, alarm summaries, sequence of event recorders and operator action logs can be utilised for logging purposes

6.2.3 Grid dispatch management tool log

The grid operators dispatch management tool automatically logs all dispatch instructions and acknowledgments.

6.2.4 Telephone voice recorder data

Where used telephone voice recorder data can be accessed for event investigations.

6.3 Hard copy log documents

Documents that can make up the log are:

- (a) Locally used summary documents used for shift hand over.
- (b) Manually compiled log book/log pages.
- (c) Work/Operational requests.
- (d) Operating Orders (O/Os).
- (e) Access and Test Permit forms and all forms associated with a permit.
- (f) Work Authorities.
- (g) Recording instrument charts as applicable.
- (h) Relay Flagging Sheets.
- (i) Station Inspection Check Sheets.
- (j) Hydraulic data - Spill, storage flow discharges.
- (k) Other documents necessary to complete the operational record of the station or area.

7 LOG ENTRIES

7.1 Log entries

Entries must be compiled in chronological order to provide:

- (a) Dated and timed record of events and operating actions at the station or in the operating area,
- (b) Reference to operating forms used as control documents such as Access Permits, Test Permits, Work Authorities.

When making entries:

- (a) A standard format of Time, Location, Reference and Action details must be used.
- (b) Entries must be legible,
- (c) Approved abbreviations when used must be understandable within the context of the entry, (Refer to GPG 201 and GPG 202)

- (d) Entries must be made and timed as events happen or the action is completed. Where an occurrence is found after the event, the entry must be logged.
- (e) When the log is hand written entries made out of sequence must be marked with an asterisk in the left hand side of the Time column,
- (f) When the log is hand written mistakes must be crossed out with a single line, initialled and the entry re-written correctly.

7.2 Work period information

Sufficient descriptive and/or message information must be added to the factual data within the work period for analysis of events and writing reports.

7.3 Log entries at shift change

7.3.1 At the end of the operating duty the off going operator shall;

- (a) Summarise in the log the operational status of the equipment being handed over,
- (b) Include in the log an entry summarising significant changes in equipment status that have occurred over the relevant time period prior to the shift change. Where used, a separate document may be used for shift hand over,
- (c) Where significant work on equipment is in progress at the shift change the operator shall identify in the log all relevant outstanding Access Permits, Test Permits and Work Authorities.

7.3.2 At the beginning of each operating duty the operator taking control shall;

- (a) Acknowledge in the log all the operational status entries of the off going operator,
- (b) Acknowledge in the log 7.3.1 b & 7.3.1 c above as applicable.

7.4 Recording instructions and messages

The following information must be recorded:

- (a) Instructions and messages given or received of operational or emergency nature,
- (b) Messages to or from hospitals, police, fire service, civil defence or other such services and the public.

7.5 Recording all operating actions

All operating actions must be recorded, except where logged by some other means, such as:

- (a) Machine start, stop and load changes,
- (b) Changes to protection or metering,
- (c) Reference to Operating Orders,
- (d) Issue, return, and cancellation of Access Permits, Test Permits and Work Authorities, unless recorded on a register which is part of the log,

- (e) Routine changes to plant operation, eg Services change over (C/O), associated periodic tests and inspections.

7.6 Abnormal plant operating conditions

All protection initiated operations or other abnormal conditions must be recorded and appropriately reported such as:

- (a) Circuit breaker auto-reclose or trip operations,
- (b) Trip operations on generating plant and associated equipment,
- (c) Abnormal system voltage or frequency,
- (d) Relay flags and alarms,
- (e) Abnormal hydraulic conditions,
- (f) Changes in availability, capability or mode of operation of generation, transmission, supply, protection or communication equipment.

7.7 Recording non-operating events

A record must be kept of non-operating events that could impact on the power system such as:

- (a) Abnormal weather conditions,
- (b) Earthquake,
- (c) Security breaches,
- (d) Accidents,
- (e) Environmental considerations,
- (f) Fire.

8 LOGGING AT REMOTELY CONTROLLED STATIONS (Satellite Stations)

8.1 Log retention

A satellite log must be retained at the remote station.

8.2 Document numbering

All operational forms used on the site as control documents, such as Operating Orders and Access Permits, Test Permits and Work Authorities must be numbered to a system approved by the asset owner.

8.3 Operational control transfer

Where operational control at a satellite station is delegated to the operator at that station:

- (a) All the provisions of this document apply to local logging procedures used,
- (b) Operating forms, such as Operating Orders and Access Permits, Test Permits, and Work Authorities compiled and used as control documents must be filed, and where required, returned to the controlling station for retention in the log.
- (c) The operators at both locations shall record in each log the transfer of operational control when it takes place, and write a summary of the operational status of the equipment at the time of transfer.
- (d) When equipment is under local control the operator at the normal controlling station shall record, in that log, significant operating events as they occur at the satellite station.

8.4 Event recording

While personnel are on a satellite station any significant event or abnormal condition recognised must be:

- (a) Reported to the controlling operator, and
- (b) When required, a summary of the report entered in the satellite station Log Book.

9 RETENTION OF THE LOG

- 9.1 All records that are part of the log must be retained for a minimum period set by the asset owner. A minimum retention period of 2 years is considered industry norm.
- 9.2 Log documentation linked to an accident/incident should be kept indefinitely with the accident/incident report.
- 9.3 Where practicable hard copy log documents must be stored in chronological order.

APPENDIX A

REFERENCES AND RELATED DOCUMENTS

Documents referred to in this document are:

GPG 201 Standard Locality Abbreviations

GPG 202 Defined Operating Terms and Abbreviations

GPG 301 Access and Test Permits

GPG 302 The Work Authority

GPG 305 Operating Orders: Compiling and Actioning

SM-EI Safety Manual - Electricity Industry

OSH Approved Code Of Practice “The Design, Safe Operation, Maintenance and Servicing of Boilers.