5ESS® SWITCHING EQUIPMENT
CURRENT DRAIN DATA

CHANGES

D. Description of Changes

Added current drain information for circuits used in or with the 5ESS® Switch. The added circuits are:

1. SM2000 SMPU 4
2. SM2000 TSIU4
3. SM2000 DSC3
4. DLTU-E
5. Alarm status unit
6. Alarm status unit (MMRSM)
7. Enhanced 911 (ESA)
8. 5KVA inverter WP91652, L50
9. Video terminal KS23554

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CD-5D002-01
ISSUE 3D
APPENDIX 4M
DWG ISSUE 7M
DIST CODE BT13

5ESS® SWITCHING EQUIPMENT
CURRENT DRAIN DATA

CHANGES

D. Description of Changes

D.1 Added current drain information for circuits used in or with the 5ESS® Switch.

D.2 Added clarifying notes to Figures 1-5 for current drains, wattages, heat release, energy usage and drains for 6:1 and 4:1 Concentration Ratios.

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5ESS® SWITCHING EQUIPMENT
CURRENT DRAIN DATA

D. Description of Changes

D.01 Added current drain information for circuits used in or with the 5ESS® Switch. The added circuits are:

CNI RING NODE
AFA and DFA CABINETS
DLTU2
DSU2
FIU2
FIU3
MODEM POOLING
TAU
TRCU2
WP-91652,L20 INVERTER

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5ESS™ SWITCHING EQUIPMENT
CURRENT DRAIN DATA

CHANGES

D. Description of Changes

D.1 Added current drain information for circuits used in or with the 5ESS switch.

D.2 Updated figures for long-range estimates of current drains, power input, heat release, and energy usage.

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DEPT 55613-RCK-JCB

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5ESS™ SWITCHING EQUIPMENT

CURRENT DRAIN DATA

CHANGES

D. Description of Changes

D.1 Added current drain information for circuits used in or with the 5ESS switch.

D.2 Added figures for long range estimates of heat release, energy usage, RSM and ORM drains, and toll office drains.

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5ESS™ SWITCHING EQUIPMENT
CURRENT DRAIN DATA

TABLE OF CONTENTS PAGE

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit provides current drain data for all -48 volt power required by the 5ESS Circuits (equipment units). The current drain data are given for both List 1 (busy hour) conditions and List 2 (peak) conditions. (No List 3 (converter) current drain data apply to the 5ESS Switching System.) This information is required to engineer the -48 volt power plant, the battery reserve, and the dc power distribution.

2. GENERAL DESCRIPTION OF OPERATION

2.01 Each circuit in the 5ESS System is listed, together with its L1 and L2 drains. Equipment notes and statistical presentations assist preliminary estimates of power requirements.

SECTION II - DETAILED DESCRIPTION

1. CIRCUIT ARRANGEMENT

1.01 FS 1, Circuit List. All current drains in SD-5D002-01 are listed by Schematic Drawing (SD) number. FS 1 provides a cross-reference from these SD numbers to the applicable circuit titles and equipment drawings. Activity factors are also supplied.

1.02 FS 2, List 1 Current Drains. Busy hour (List 1) current drains are provided for all circuits used in 5ESS Switches. Assignments per bus are also given where appropriate. Drains for other circuits commonly used with 5ESS Switches are also given. These drains should be used in sizing the power plant for a 5ESS Switch.

1.03 FS 3, List 2 Current Drains. Peak (List 2) drains are furnished for all circuits used in 5ESS Switches. Assignments per bus are also given where appropriate. Drains for other circuits commonly used with 5ESS Switches are also given. These drains should be used in sizing the power feeders for a 5ESS Switch.

1.04 FS 4, Graphs. Graphs are supplied for long-range planning purposes and should be used until computer runs can be made from the 5EDOPS (5ESS Digital Ordering and Planning System). The following graphs are provided:

Figure 1. Lines vs Busy Hour Ampere Drains

Figure 2. Lines vs Busy Hour Kilowatt Drains

Figure 3. Heat Release

Figure 4. Energy Usage

Figure 5. 6:1 and 4:1 Concentration Ratio Drains

Figure 6. Remote Switching Module (RSM) and Optical Remote Module (ORM) Drains

Figure 7. Toll Office Drains (Preliminary)

Figure 8. CM2 (Communication Module, Model 2) Busy Hour Drains (Smaller Offices)

Figure 9. CM2 Busy Hour Drains (Dual Fabric, for Larger Offices)

1.05 FS 5, Unit Drains. Equipment current drains by J-code and List Number are given for all 5ESS equipment units. These drains are the basis of the 5EDOPS Computer Program drain calculations. They may also be used for drain calculations in unusual situations.

1.06 FS 6, Protected AC Drains. Current drains and heat release for equipment items commonly connected to the "protected" ac inverter are listed. Note that the maximum capability of this inverter is 1000 VA, corresponding to 8.33 amperes at 117 volts ac. This must not be exceeded. This power is provided only for equipment that must function during the interval between loss of commercial ac power and initiation of emergency back-up ac power.

1.07 FS 7, Essential AC Drains. Current drains and heat release for equipment commonly connected to the "essential" ac bus are listed. This is equipment that is NOT required during the interval between loss of commercial ac and initiation of emergency back-up ac. There are no specific limitations on the power required by this equipment.

1.08 Information Notes. General Information Notes are given as follows:

Note 301. General powering data is supplied, including information on the FASTECH Power Units, concentration ratios, and engineering rule ramifications.

Note 302. 5EDOPS is recommended to provide the most accurate current drain predictions for an office.

Note 303. System heat release calculations are explained.

Note 304. System annual energy consumption calculations are explained.

Note 305. Current drains for RSMs and ORMs are discussed.

Note 306. Host office drains are compared to stand-alone office drains; an estimating figure is given.

Note 307. Drains for a toll-only office are discussed. These drains are very preliminary at this time.

Note 308. Protected ac current drains are discussed.

Note 309. Essential ac current drains are discussed.

Note 310. 5ESS Switch current drains at various battery voltages are discussed, and a method is given to calculate these drains. This is important in determining office reserve battery capacity and reserve time.

Note 311. Current drains for the new Model 2 communications module (CM2) are given for both single and dual fabric, and for various quantities of switching modules.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 Busy hour (L1) drains are calculated at -52.5 volts. Peak (L2) drains are calculated at low battery (-42.75 volts).

2. FUNCTIONAL DESIGNATIONS

None.

3. FUNCTIONS

None.

4. CONNECTING CIRCUITS

None.

5. MANUFACTURING TESTING REQUIREMENTS

None.

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