PROCEDURES
FOR OPERATIONAL TROUBLE REPORTS
ON STORED PROGRAM CONTROL SYSTEMS

CONTENTS

LIST OF FIGURES

1. GENERAL

1.01 This practice describes the purpose and general characteristics of the Operational Trouble Report (OTR) on Stored Program Control Systems (SPCS) switching equipment. It also defines the responsibilities of the Switching Control Center (SCC), Electronic Systems Assistance Center (ESAC), and the Maintenance Engineer in the OTR process.

1.02 This practice is being reissued to add item 39 (Supplier No.) to the Operational Trouble Report form. Revision arrows are used to emphasize the more significant changes.

1.03 The existence of the OTR process and participation in it must be based on an agreement between the Supplier and the Bell Company. Details of the program may vary between Suppliers. However, it would be advantageous, when possible, to use the same OTR form for all Suppliers. The sample Operational Trouble Report (EO-211) supplied at the back of this practice is recommended for this purpose and may be used as a reproducible master. It may also be ordered from your forms control organization.

1.04 Any changes or corrections to improve this practice should be made in accordance with Practice 000-010-015.

2. WHEN TO ORIGINATE AN OPERATIONAL TROUBLE REPORT

2.01 OTRs should be originated on SPCS troubles involving hardware or software. The OTR may also be used to transmit comments on system operation or equipment arrangements. The reports are intended as feedback to the Supplier on manufacturing or design conditions.

2.02 OTRs are originated by the maintenance force responsible for the machine. The originator may be a member of the SCC or a person assigned directly to the office. The ESAC and Maintenance Engineering personnel should also originate OTRs when they have the most complete knowledge of the trouble available.

2.03 OTRs are originated for the following reasons:

(a) Any significant abnormal condition for which there is no satisfactory explanation or which appears to be the result of hardware or software design deficiency. Any abnormal condition explained in the Bell Company as a design defect should be documented by that Bell Company at least once by an OTR.

(b) Each total outage exceeding 2 minutes. It may be used for outages of less than 2 minutes. Outages exceeding 2 minutes are entered into the Bellcore Long Outage Study data base.

(c) To advise the Supplier of any unusual condition. It is an extremely significant opportunity to improve SPCS machine performance.

2.04 Verbal or on-site contact with the Supplier does not relieve Bell Company personnel of the responsibility to originate an OTR. Documentation is essential to aid in correction of the problem.

3. PREPARATION OF THE SPCS OPERATIONAL TROUBLE REPORT (FORM EO-211)

3.01 The front of the OTR form must be carefully completed in the case of outages exceeding 2 minutes. It contains sections on outage identification, service impact, activity in progress, initial cause and location, complicating factors, and recovery actions. Comments and information on other SPCS troubles should be given on the back of the form.

3.02 Each of the front sections is clear and easy to complete. Narrative is kept to a minimum and many questions require only a check mark or short answer. Although most of the form is self-explanatory, a detailed explanation of each question is given below.

Identification	1 Company	Company Originator Name	Tel. No. ( )	Type Of Report	
	2 SPCS Type	5 Generic / 6 Issue	8 Incident Date (Mo. Day. Yr.) / /	☐ Outage ☐ Over 2 Min.	Complete Both Sides
	3 Office Name	City / State	9 Incident Time (2400 Clock)	☐ Under 2 Min.	Complete Identification And Reverse Side Only
	4 Base & Control No./SFTW. ID.	7 Office Data Issue	10 Latest Overwrite No.	☐ Trouble	
				☐ Information	

Figure 1. Outage Identification Section

INDIVIDUAL SECTIONS OF THE OTR FORM

3.03 **Identification Section:** This section should be completed for every OTR generated. It contains information which identifies the incident and its place of origin. (See Fig 1.) The numbered items and their explanations are:

(1) **Company** - The name of the Bell Company that is generating the report.

  • Company Originator Name - The name of the person who originates the OTR.

  • Tel. No. - Telephone number of the Bell Company originator.

Type of Report - The type of report submitted may be one of the following:

  • Outage Report - An outage report may be generated any time call processing has been suspended due to trouble. If the outage was over 2 minutes it will be used for the Bellcore SPCS-Long Outage Study (LOS) in addition to supplying information to the supplier. If over two minutes both sides of the OTR should be completed. If less than two minutes the identification portion of the front of the OTR and the reverse will be completed. The reverse side of the OTR contains space for comments.

  • Trouble Report - Used for events other than outages. With this type of report, only the identification section and the reverse side of the OTR need to be completed. The reverse side contains space for a description of the problems.

  • Information Report - Used to convey information on system operation or equipment arrangements to the Supplier. It provides feedback on conditions relating to the manufacture or design of the equipment. Only the identification section and reverse side of the OTR need to be completed. The reverse side contains space for the information to be provided.

(2) **SPCS Type** - The Stored Program Control System for which the report is generated.

(3) **Office Name** - The name of the central office which generates the report. Use the 11-character common language code.

- City and State - The city and state where the central office is located.

(4) **Base and Control No./SFTW. ID** - This space may not apply to all SPCS.

(5) **Generic** - The generic program the system was running on at the time of the reported incident.

(6) **Issue** - The program issue the system was running on at the time of incident, if applicable.

(7) **Office Data Issue** - The parameter issue or the office data issue at the time of the incident, if applicable.

(8) **Incident Date** - The date on which the incident occurred in month/day/year form. For example, February 15, 1984 would be 02/15/84. If this is not an outage report, use the current date.

(9) **Incident Time** - The time (on the 2400-hour clock) at which the incident occurred. For example, 8:15 P.M. is 2015. If this is not an outage report, leave blank.

(10) **Latest Overwrite No.** - The number of the most recent Overwrite input to the office prior to the reported incident.

Figure 2. Service Impact Section

3.04 **Service Impact Section:** The service impact section should be completed for all outages exceeding 2 minutes. This section contains questions pertaining to the impact on service of both total and partial outages. For the case of a single total or partial outage, complete the questions in the total or partial outage columns and any others applicable. For the case of a total outage with an associated partial outage, complete the questions in both columns and any others applicable. (See Fig 2.) The numbered items and their explanations are:

(11) **Total or Partial Outage** - These headings indicate the column in which information (questions 12 through 17) on total or partial outages should be placed.

(12) **Duration** - The length of the total or partial outage (placed in the proper column) in hours, minutes, and seconds.

(13) **No. of Lines** - The **estimated** number of subscriber lines out of service due to this total or partial outage.

(14) **Percent of Lines** - (for **partial** outages). The **estimated** percentage of all lines that are out of service due to this outage.

(15) **No. of Trunks** - The **estimated** number of trunks out of service due to this outage.

(16) **Percent of Trunks** - (for **partial** outages). The **estimated** percentage of all trunks that are out of service due to this outage.

(17) **No. of Complete Trunk Groups** - The number of **complete** trunk groups out of service due to this outage.

(18) **No. of Customer Trouble Reports (Code 5)** - The number of Code 5 Customer Trouble Reports attributed to this outage.

(19) **Previous 15 Minute (Inc.-Org.) Calls** - The traffic count, incoming plus originating calls, during the 15-minute period immediately preceding the outage.

(20) **Check If System Went Into Overload (Processor)** - System in overload means processor overload.

(21) **Check If Recent Change was Lost** - If the recent change (RC) area was mutilated, check this box. Also, complete questions 22 and 23.

(22) **Approx. No. Of Service Orders Lost** - If RC was lost, **estimate** the number of service orders lost.

(23) **Approx. Time RC Was Out** - If RC was lost, estimate the total time (hours and minutes) that the RC data was out.

(24) **Type of Partial Outage** - Explain the type of **partial** outage, e.g., loss of network, slow dial tone, operator service denied to some end offices, loss of RC, etc.

(25) **Remote Switching Systems** - In the appropriate column, place the type(s) and number(s) of remote switching systems affected by the outage and the total number served by the office.
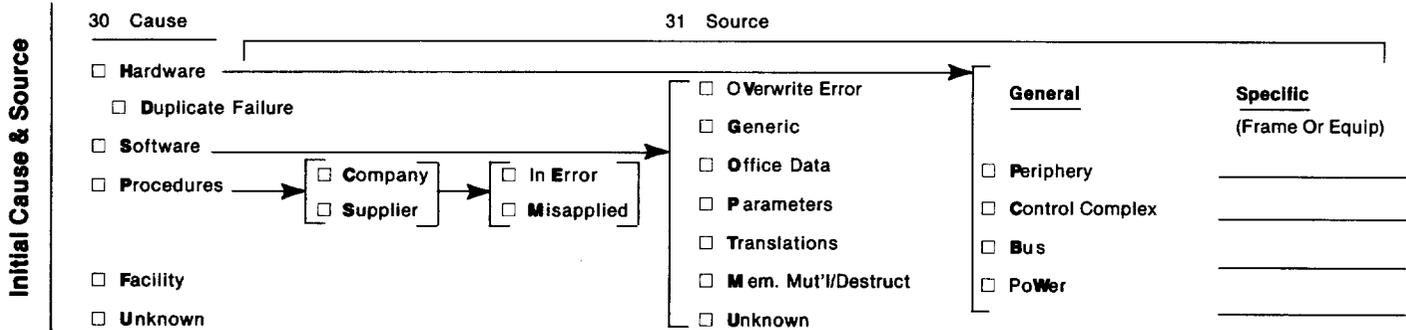
Figure 3. Activity in Progress Section

3.05 Activity in Progress Section: This section should be completed for all outages exceeding 2 minutes to indicate what activity was in progress immediately preceding the outage and/or to indicate some **other factor** which might be related to outage. (See Fig 3.) The numbered items and their explanations are:

(26) **Activity in Progress** - Check one of the boxes marked None, Maintenance, Change, or TTY Input or Requested Output Activity.

- If Maintenance is checked, also check whether it was Preventive or Corrective and enter what Equipment was Out of Service (see Number 28), if any. Also indicate the type of maintenance activity in progress.

- If Change is checked, also check the specific change activity such as Overwrite Input and associated Overwrite Number (see Number 29), Retrofit, Change Notice (CN), and its number. If Card Write is checked, also indicate if writing Translations or Single Card (Parameters).

(27) **Other Factor** - Check any other unusual factor that occurred before the outage, such as unusual office Temperature (indicate the temperature in degrees F), unusual office Humidity (indicate percentage), lighting, etc.

(28) **Equipment Out Of Service/Maintenance In Progress** - If maintenance is checked as the activity in progress, indicate what equipment was out of service and/or what maintenance activity was in progress (see Number 26).

(29) **Overwrite No.** - If change is checked as the activity in progress and overwrite was being input, enter the Overwrite Number (see Number 26, Change).

Initial Cause & Source

30 Cause   31 Source

☐ Hardware

☐ Duplicate Failure   ☐ OVerwrite Error   General   Specific

☐ Software   ☐ Generic   (Frame Or Equip)

☐ Procedures → [☐ Company] → [☐ In Error]   ☐ Office Data   ☐ Periphery
               [☐ Supplier]   [☐ Misapplied] ☐ Parameters   ☐ Control Complex _____

                                               ☐ Translations   ☐ Bus

☐ Facility   ☐ Mem. Mut'l/Destruct   ☐ PoWer   _____

☐ Unknown   ☐ Unknown   _____

Figure 4. Initial Cause and Source Section

3.06 Initial Cause and Source Section: This section should be completed for all outages exceeding 2 minutes. It contains information on the initial cause of the outage (Hardware, Software, Procedures, etc.) and/or the specific "source" of the problem (Periphery, Overwrite, Company Procedures, etc.). (See Fig 4.) The numbered items and their explanations are:

(30) **Cause** - The initial cause of the outage, i.e., Hardware (or Duplicate hardware failure), Software, Procedures, Facility, or Unknown.

(31) **Source** - The location of the cause of the outage.

- For Hardware, check a general source such as Periphery, Control Complex, Bus, or Power, and enter the specific frame type or equipment involved.

- For Software, sources are Overwrite Error, Generic, etc.

- For Procedures, check either Company or Supplier and whether the procedures were wrong (In Error) or correct but improperly used (Misapplied).
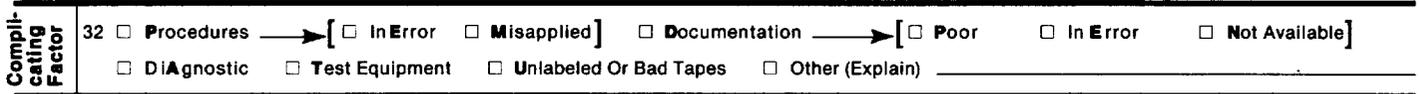
Complicating Factor

32 ☐ Procedures → [☐ InError ☐ Misapplied]   ☐ Documentation → [☐ Poor   ☐ In Error   ☐ Not Available]
   ☐ DIAgnostic   ☐ Test Equipment   ☐ Unlabeled Or Bad Tapes   ☐ Other (Explain) _____

Figure 5. Complicating Factor Section

3.07 Complicating Factor Section: This section should be completed for all outages exceeding 2 minutes to describe factors, if any, that caused a routine problem to become an outage, complicated an outage already in progress, or prolonged the outage. (See Fig 5.) The numbered item and its explanation is:

(32) Check any complicating factor such as Procedures, Documentation, Diagnostics, Test Equipment, Unlabeled or Bad Tapes, or Other.

- For the case of Procedures, check if they were In Error or Misapplied. If In Error, indicate procedure or document number on back of form.

- For the case of Documentation, check whether the documentation is Poor, In Error or was Not Available. If In Error, indicate document number on back of form.

- If Other Factor is the case, explain on back of form.

Recovery Actions

33 Call Processing Recovery Actions (R.A.)							35 Other Recovery Actions
NTI DMS-10	–	INIT	–	–	–	SYS	☐ Zero RC Intentionally ☐ Power Down Equipment
NTI DMS-100, DMS-200	–	Warm	–	Cold	–	Reload	☐ ReconFigure System ☐ ReSeat Connector ☐ Apply Practice Procedure # _____
AT&T 1ESS, 1AESS	DV	P1	P4	P5	P6	P7	☐ Replace Equipment
AT&T 2ESS, 2BESS, 3ESS	EM AUD	Tr CLR	RC CLR	St CLR	BSTP	BKDT	36 Type 37 Quantity
AT&T 5ESS, 1A/APS	50	51	–	52	53	54	
Other (Enter R. A. Type)							
No. Of Auto. R. A.'s							
No. Of Manual R. A.'s							☐ Other (Explain) _____

34 Levels Of Assistance Used		
☐ CO/SCC ☐ ESAC/TAC ☐ Supplier	38 Company OTR No.	39 Supplier No.

Refer to Practice 010-200-001   **Attach All TTY Printouts**

Figure 6. Recovery Actions Section

3.08 **Recovery Actions Section:** This section should be completed for any outage over 2 minutes. It contains information on what actions were taken to bring the system back up. (See Fig 6.) The numbered items and their explanations are:

(33) **No. of Call Processing Recovery Actions (R.A.)** - Circle the type of recovery action and in the same column indicate the number of manual and/or automatic recovery actions of the type. If more than one type of recovery action occurs, fill out the corresponding columns.

(34) **Levels of Assistance Used** - Check **any** and **all** organizations that assisted in solving the problem, e.g., CO/SCC, ESAC/TAC, or Supplier.

(35) **Other Recovery Actions** - Check any other actions used to bring the system up, e.g., Power Down Equipment, Replace Equipment, etc.

- For Replace Equipment, list the Type and Quantity of equipment removed in space provided (see Numbers 36 and 37). Continue on reverse, if necessary.

- If a practice procedure is used, write Practice Number and paragraph.

(36) **Type** - If any equipment was replaced as a recovery action, indicate what type, such as circuit pack code, remreed grid type, etc. (See Number 37.)

(37) **Quantity** - If equipment was replaced, indicate how many of each type were replaced.

(38) **Company OTR Number** - ESAC organizations should assign consecutive serial numbers to all OTRs. Number assignment may be a function of the ESAC Maintenance Engineer. Serial numbers should be in the form year-month-OTR number. For example, the third report received in April of 1984 would have serial number 84-04-03.

(39) →**Supplier Number** - Enter the Suppliers trouble identification number if the Supplier assisted in the recovery action.←

4. OPERATIONAL TROUBLE REPORTS ROUTING

4.01 Fig 7 shows the flow of OTRs from the originator to the Supplier.

4.02 The initial processing step is the SCC handling of the OTR. Whether the OTR has originated in the SCC or outside, the SCC supervisor is responsible for the initial processing. This entails providing a copy of the OTR to the supporting Maintenance Engineer, the SCC file, and then forwarding the original copy with printouts to the ESAC. The SCC supervisor is expected to forward the original **within 1 work day** after it becomes available from the originator. The OTR should be typed or printed legibly.

4.03 The Maintenance Engineer will analyze the OTR to determine whether other actions are required by the Bell Company. Engineering-initiated actions may include origination of an Engineering Complaint to obtain a formal answer or to obtain interim credit. The Maintenance Engineer may recommend physical or procedural changes to facilitate operation while long-term corrections are being evaluated and developed.

4.04 ESAC's responsibility in processing the OTR includes reviewing it to assure that the required information has been given. Providing additional information and maintaining an ESAC OTR file, and an ESAC Maintenance Engineer file, if separate files are maintained, are also ESAC responsibilities. ESAC is expected to forward the original copy of the OTR with attachments to the Supplier **within 5 work days.** ESAC also provides a copy of all OTRs on outages with over 2 minutes duration to:

> District Manager -
> Switching and Processor
>   Field Performance
> Bellcore Quality Assurance
>   Technology Center
> Room 2L214
> Crawfords Corner Road
> Holmdel, NJ 07733

This will be included in the Bellcore SPCS-Long Outage Study. ESAC will also send a copy to the Bell Company Headquarters Maintenance Engineer.

4.05 The Company may alter the OTR when necessary. However, the purpose of the OTR routine is to provide direct information from the originator. Missing information on the cover sheet should be completed. Beyond that, ESAC and SCC should normally add extra comment pages as required rather than alter the comments of the originator.

4.06 The SPCS input/output printouts covering the period of the trouble condition (usually 15 minutes prior to the first symptom to 30 minutes after normal operation has been restored) are an essential part of the OTR and should be forwarded with it. The printout sent should be the original rather than

a copy.

5. RESPONSE TO OPERATIONAL TROUBLE REPORTS

5.01 OTRs do not require formal response to the originating Company. In any case, where the originating Company requires a specific response, it may be necessary to originate an Engineering Complaint or a letter to obtain the desired response from the Supplier. A complaint or letter should not replace a needed OTR. The OTR is designed to provide rapid, highly detailed information on trouble conditions to the Supplier. The most important results of OTRs is improved design. This result will be seen as Overwrites and drawing changes.

5.02 A trouble status report and/or profile report should be kept to detail all OTRs. These documents are updated periodically and are provided to the Bell Companies. Some systems also provide computer terminal status information of OTRs and other pending corrections. In the event the status of a particular OTR is required by the originating Bell Company, the ESAC should obtain this information from the Supplier.

6. PRIORITY REPORTS

6.01 The term "Priority" is reserved for application by the ESAC's and the Supplier's Field Support Organization. ESACs may so designate OTR's containing urgent problems that have been thoroughly analyzed, but no resolution has been reached.

6.02 The ESAC will use a large "PRIORITY" stamp on the front side of EO-211 for selected OTR's and the priority handling procedure will be initiated if the following criteria have been established:

(a) Extensive detailed analysis by ESAC has been performed and the OTR is still unresolved.

(b) ESAC desires a follow-up response on the OTR.

(c) The detailed analysis is attached to the OTR.

6.03 Upon receipt of the OTR, the Suppliers Field Support Organization will attempt to resolve the problem as if it were a call-in request for assistance. The process will involve personal contact with the ESAC investigator. Therefore, that person must be identified on the rear of form EO-211 in the "name of company contact" block.

STORED PROGRAM CONTROL SYSTEMS
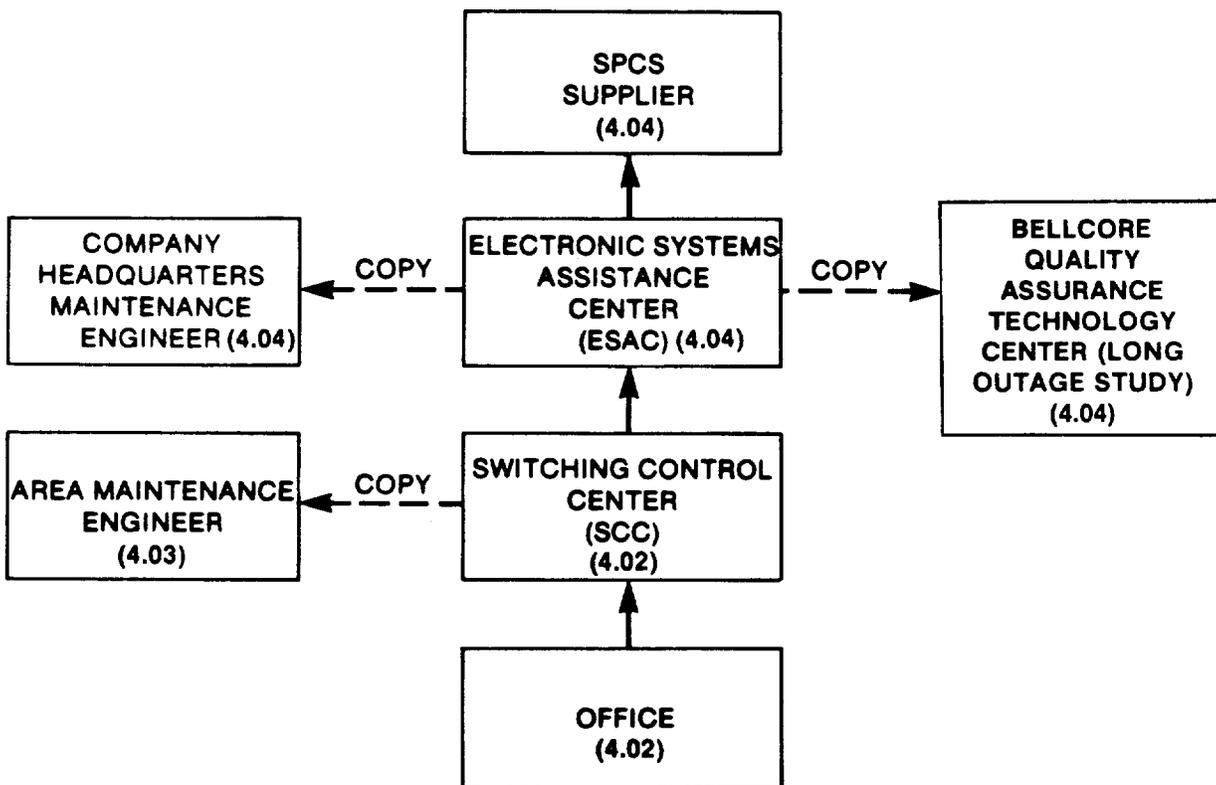## OPERATIONAL TROUBLE REPORT FLOW

Figure 7. Operational Trouble Report Flow

(Insert Your Company Logo) # Operational Trouble Report EO-211 (8-85)

Identification

1 Company	Company Originator Name	Tel. No. ( )	**Type Of Report**	
2 SPCS Type	5 Generic	6 Issue	8 Incident Date (Mo. Day. Yr.) / /	☐ Outage ☐ Over 2 Min.	Complete Both Sides
3 Office Name	City	State	9 Incident Time (2400 Clock)	☐ Under 2 Min.	Complete Identification And Reverse Side Only
4 Base & Control No./SFTW. ID.	7 Office Data Issue		10 Latest Overwrite No.	☐ Trouble ☐ Information	

Service Impact

Total Outage **11** Partial Outage

12 ___:___:___ Duration _____ 12 ___:___:___
   HR MN SEC   HR MN SEC

13 _____ _____ No. Of Lines _____ 13 _____

   _____ _____ % Of Lines _____ 14 _____

15 _____ _____ No. Of Trunks _____ 15 _____

   _____ _____ % Of Trunks _____ 16 _____

17 _____ _____ No. Of Complete Trunk Groups _____ 17 _____

18 No. Of Customer Trouble Reports (Code 5) _____

19 Previous 15 Minute (Inc. + Orig.) Calls _____

20 ☐ Check If System Went Into Overload (Processor)

24 **Type Of Partial Outage**

Explain Type Of Partial Outage, e.g. Loss Of Network, Slow Dial Tone, Operator Service Denied To Some End Offices, Loss Of RC, Etc.

_____

_____

21 ☐ Check If Recent Change Was Lost

22 Approx. No. Of Service Orders Lost _____

23 Approx. Time RC Data Was Out ___:___
   HR MN

25 **Remote Switching Systems**

Remote Type	No. Affected	Total Served
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Activity In Progress

26 ☐ None

☐ Maintenance ⟶ ☐ Preventive / Corrective ⟶

☐ Change _____

☐ TTY Input Or Requested Output Activity

27 **Other Factor** ☐ Office Temperature _____ °F

☐ Lightning ☐ Office Humidity _____ %

☐ Other (Explain) _____

28 **Equipment Out Of Service/Maintenance In Progress**

_____

☐ OVerwrite Input _____ ⟶ 29 Overwrite No. _____

☐ Recent Change Activity

☐ Hardware Growth ☐ Card Write ⟶ ☐ Translations / ☐ Parameters

☐ RenaMe ☐ ReStart ☐ ReTrofit ☐ Par. Update

☐ CN# _____ ☐ Other _____

Initial Cause & Source

30 Cause   31 Source

☐ Hardware

  ☐ Duplicate Failure

☐ Software _____

☐ Procedures ⟶ ☐ Company / ☐ Supplier ⟶ ☐ In Error / ☐ Misapplied ⟶

☐ Facility

☐ Unknown

☐ OVerwrite Error
☐ Generic
☐ Office Data
☐ Parameters
☐ Translations
☐ Mem. Mut'l/Destruct
☐ Unknown

General
☐ Periphery
☐ Control Complex
☐ Bus
☐ PoWer

Specific (Frame Or Equip)
_____
_____
_____
_____

Complicating Factor

32 ☐ Procedures ⟶ [☐ In Error ☐ Misapplied] ☐ Documentation ⟶ [☐ Poor ☐ In Error ☐ Not Available]

☐ DiAgnostic ☐ Test Equipment ☐ Unlabeled Or Bad Tapes ☐ Other (Explain) _____

Recovery Actions

33 **Call Processing Recovery Actions (R.A.)**

NTI DMS-10	–	INIT	–	–	–	SYS
NTI DMS-100, DMS-200	–	Warm	–	Cold	–	Reload
AT&T 1ESS, 1AESS	DV	P1	P4	P5	P6	P7
AT&T 2ESS, 2BESS, 3ESS	EM AUD	Tr CLR	RC CLR	St CLR	BSTP	BKDT
AT&T 5ESS,1A/APS	50	51	–	52	53	54
Other (Enter R. A. Type)						

No. Of Auto. R. A.'s

No. Of Manual R. A.'s

35 **Other Recovery Actions**

☐ Zero RC Intentionally ☐ Power Down Equipment
☐ ReconFigure System ☐ ReSeat Connector
☐ Apply Practice Procedure # _____
☐ Replace Equipment

36 Type	37 Quantity
_____	_____
_____	_____
_____	_____

☐ Other (Explain) _____

34 **Levels Of Assistance Used**

☐ CO/SCC ☐ ESAC/TAC ☐ Supplier

38 Company OTR No.	39 Supplier No.

Refer to Practice 010-200-001

Attach All TTY Printouts

Trouble/Information Reports — Outage Comments

(Place Description Of The Trouble Encountered, Information For Supplier, Outage Comments Or Any Clarifying Material Below)

Name Of Company Contact | Tel. No.