



AM-TR-CSI-000090

Ameritech Guidelines for Product Change Notices

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| To: | All Interested Parties |
| Priority: | N/A |
| Effective Date: | N/A |
| Issue Date: | Issue #1, May 1992 |
| Expires On: | N/A |
| Training Time: | N/A |
| Related Documents: | N/A |
| Canceled Documents: | N/A |
| Issuing Department: | N/A |
| Distribution: | NA |
| Business Unit: | N/A |

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1. General

This document provides suppliers of telecommunications equipment with proposed Product Change Notice guidelines that should be used to effectively interface with Ameritech Services and its Affiliates concerning product changes. Although these guidelines are subject to Ameritech Services' copyright, a supplier may elect to follow the procedures described herein with customers other than Ameritech.

There is a sample Product Change Notice form, EO-005, at the end of this document. It may be reproduced and it may be altered, but all items in the form must be separately contained in a supplier's Product Change Notice. If the sample form is used, attachments may be added to expand any field when required for more detail.

2. Definitions

BUYER as defined in this document, means Ameritech Services and/or its Affiliates.

SUBSCRIBER as defined in this document, means Buyer's Customer or end user.

A PRODUCT CHANGE is a modification to an existing product. The change can be as simple as a component change or as complex as the complete redesign of a circuit. They can be issued to fix known problems or introduce new features.

CHANGED PRODUCT is the term describing a product that has had a particular product change applied.

PRODUCT CHANGE NOTICE (PCN) is a term that defines the document that describes a reportable product change. Part 6.0 defines the information requirements of the PCN.

NEW PRODUCT ANNOUNCEMENTS are required for certain equipment changes. Some Product Changes are of such magnitude that it is impractical to update existing products either in the field or at the manufacturer's location. In such cases, the manufacturer may either discontinue manufacture of the old product and make only the new one or continue making both products. In either case, the Supplier must notify the Buyer of such a new product's existence by means of a New Product Announcement rather than a Product Change Notice. New Product Announcements are not reviewed in depth in this document and are mentioned only to clarify the distinction between the two types of notification.

PRODUCT TECHNICAL SPECIFICATION is a term defining the Supplier's published literature that describes the operating parameters, environmental considerations and features of the product.

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CONTROL SPECIFICATIONS are mandatory requirements imposed by Buyer upon a particular product due to its critical nature and risk factor. These specifications must be clearly stated by Buyer and agreed to by the Supplier.

MAINTENANCE ENGINEER as used in this document defines the Buyer's engineering representative responsible for interfacing with suppliers on product change issues.

The CLEI code identifies telecommunications equipment or products by means of a specific ten character identification code. Bar code labels with the human readable CLEI codes are required and shall be in accordance with Telcordia (formally Bellcore) TR-STS-000485

Additional Information on CLEI codes and Bar Code labels can be found in the following Telcordia (formally Bellcore) Technical References as they may be revised from time to time by Telcordia (formally Bellcore):

- TR-ISD-000325 Equipment Information required from Suppliers for Operations Systems
- TR-STS-000485 "COMMON LANGUAGE (COMMON LANGUAGE is a registered trademark and CLEI, CLLI, CLCI, and CLFI are trademarks of Telcordia (formally Bellcore) Equipment Coding Processes and Guidelines"
- TR-STS-000383 Generic Requirements for COMMON LANGUAGE Bar Code Labels

FORM, FIT, OR FUNCTION is Defined as Follows:

- Form - Physical shape
- Fit - Mounting arrangement
- Function - Features and operational design of the circuit.

Equipment Types

1. **HARD-WIRED EQUIPMENT:** This is equipment that is intended to be permanently mounted and connected into central office/transport systems. To make a change to this equipment one must go to the equipment location to apply the change.
2. **NON-DEFERRABLE PLUG-IN:** This is a plug-in-circuit that is basic to the operation of the hard-wired equipment into which it plugs and is usually provided with the hard-wired equipment when it is initially supplied. Examples are a power supply circuit pack for a channel back or a circuit pack for common equipment in a switching system.

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Changes to non-deferrable plug-ins can be made by modifying the plug-in on-site or by replacing the old plug-in with new ones, or with ones that were modified at the manufacturer's repair location.

3. DEFERRABLE PLUG-IN: This is usually a plug-in circuit, such as a carrier channel unit or a switching machine trunk circuit, not mounted in the hard-wired equipment initially, but can be deferred until an order is processed that requires this plug-in circuit. Deferrable plug-ins require additional effort in administering Produce Change Notices (see Part 8).
4. PORTABLE TEST EQUIPMENT: For purposes of the Product Change Notice procedure, portable test equipment is administered in the same manner as deferrable plug-ins.

STATUS/AVAILABILITY of a product: The status/availability of a product will be listed in the appropriate specification, field maintenance and engineering documents for the product.

1. STANDARD: The product is currently orderable (CO).
2. MANUFACTURE DISCONTINUED (MD): The product is no longer manufactured and is usually unavailable.

There may be instances where the above terms are not appropriate, particularly when an item is not manufactured by the supplier. Terms such as not orderable, discontinued availability, additions and maintenance only, currently orderable, etc. may be appropriate. The meaning of each should be clearly understood and written into the individual contracts.

SUPPLIER, as used in this document, is the manufacturer or distributor from whom the product was purchased. Usually, this will also be the company that warrants the product.

CIRCUIT PACK ROTATION is a method of completing of a product change when the change is accomplished exclusively by plug-in circuit substitution, one series/issue plug-in exchanged for another. The Supplier sends a number of new or modified plug-ins to Buyer, a like number is returned to the supplier for exchange or modification, the process is repeated until all of Buyer's plug-ins is required to accomplish this type of change. The recommended minimum seed stock supply of units required in a rotation program is to allow the vendor to complete the PCN to meet the requirements in 6.3 and 6.4. The Supplier will furnish the required seed stock unless Buyer determines that it has adequate spare stock on hand to accomplish the change.

METHOD OF PROCEDURE (MOP) is a written step by step procedure covering all phases of the installation of a product change. The required items to be contained in the MOP are detailed in part 9.

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3. Product Changes

Product changes range from those that are considered very minor and not field affecting to those that are significant. Non-field affecting would be those that have no effect on Buyer use and are transparent to the field maintenance forces, no component values have changed and the product functions exactly as it did prior to the change. Since all changes may have an effect on product reliability, they must be documented. A Product Change, however, does not include the introduction of new products.

Modifications are considered significant when they affect the performance or life span of the product. Such changes include any that can affect the form, fit, function, product technical specification, safety or reliability of the product. Even a cosmetic change may be considered significant. For example, a cosmetic change that involves painting a product with a new, textured paint which affects the thermal threshold of the product would be considered significant. Since the paint has altered the product's ability to withstand certain temperatures and, therefore, its performance, it must be referred to as a Product Change.

Suppliers are obligated to document all changes to their products throughout the life of the product in accordance with Section 4. Customer notification of change should be in accordance with Par. 6.1.

Other sections of this document discuss situations when it may be appropriate for Buyer to implement and install a product change. However because of limited facilities, lack of proper test equipment and personnel available for this type of work, no product change will be accomplished by providing loose parts to Buyer without prior Buyer approval. This is particularly relevant where plug-in circuits are involved.

Most of the sections of this document apply directly to hardware. However, the term Product Change can include changes to hardware, firmware and software. There are some procedures that only apply to firmware and software changes.

Firmware in the loose chip form is very ESD sensitive, and Buyer's field locations usually are not equipped for operations involving the handling and changing of this type of material. Therefore, product changes that involve firmware should be accomplished by changing the complete plug-in unit that the firmware is mounted on or down loading the memory device. The firmware issue marking should comply to the marking standards as outlined in Telcordia (formally Bellcore) TR-STS-000485, as revised from time to time by Telcordia (formally Bellcore).

Software: In today's environment, many changes to a product are accomplished in software only, without changing any hardware. These changes are made to fix problems, improve operation, add features or update a product. There are generally two types of changes.

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1. Patching: (Sometimes called overwrite or software fix). This is information issued by the supplier to change a particular piece of a program. It may be supplied on machine readable media or via a mechanized system.
2. Program Retrofit or Update: This is usually the change of a complete program and is supplied on disk or tape.

Rules for software changes can be found in the Telcordia (formally Bellcore) LSSGR (FR-NWT-000064) section 8.6 (TR-TSY-000541). This section was primarily issued for switching systems but applies to any software based system. Documentation for software standards can be found in Telcordia (formally Bellcore) LSSGR sections 19.2 and 19.3, (TR-TSY-000519) and TR-EOP-000208, Stored Program Control Software Documentation Standards.

4. Product Change Classification

The classification of changes serves to uniformly categorize all changes made to products. All changes to a Supplier's product shall be classified by that Supplier to one of the classification codes. These codes are A, B, D, and 'other' (Suppliers internal coding of product changes may differ, but any reference to product changes issued to Buyer should reflect the A, B, D or 'other' classification). The changes range from higher to lower degrees of urgency as they are listed from A to 'other'. A has the highest urgency, while 'other' has the lowest. Each classification code designates the urgency of the change and the party responsible for financing the change (i.e., Supplier or Buyer). If Buyer disagrees with any classification issued by the Supplier, the Supplier shall present evidence that such a classification is justified. Supplier justification of classification shall be presented in writing within 30 days of said request from buyer. If Buyer disagrees with the Supplier's classification justification, the Supplier will negotiate with Buyer until a final resolution is mutually agreed upon by both parties.

Class A, B, D and 'other' changes are defined in the following paragraphs, along with a general description and the application of each.

Class A CHANGE

1. The Class A designation applies to changes required to correct a product deficiency, for example:
 - Safety or fire hazard (Class A changes to correct safety or fire hazards will not be made dependent on any other change).
 - Electrically or mechanically inoperative.

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- Operational or design defects that cause higher than the Supplier's advertised product failure rates on a per unit rate (i.e., failure in time for a circuit pack), or cause adverse Buyer/subscriber reaction.
 - Unsatisfactory operation
 - Product does not operate as documented in the Supplier's descriptive literature and/or product technical specifications, as warranted by the supplier or specified in the contract with Buyer
2. Buyer must be informed immediately upon determination that any Class A change is required since it could affect installation dates or require changes to products which have been delivered to Buyer for installation.
 3. Class A changes require immediate action by the Supplier to correct the condition in all of the product involved (except as indicated in 7). This would include all of the product still owned by the supplier and all of the product owned by Buyer including spare stock.
 4. Product in manufacture should have all available product changes completed before shipment.
 5. Product delivered to Buyer but still being installed should have all Class A changes applied to the equipment before it is turned over to Buyer. Where Class A change application could affect job completion dates, Buyer's Maintenance Engineer should be notified. the change could then be reviewed and their application prioritized.
 6. A list of all Class A changes applied during the equipment installation period should be turned over to the Maintenance Engineer.
 7. Limited Application or conditional Changes: In some cases it may be necessary to make a change only on a limited number of a particular type of product. This might occur when it is necessary to correct a condition that affects a specific product over time, specific subset of products, specific product combinations or with the use of certain options. These conditions shall be described on the Product Change Notice. The determination of which applications require change shall be justified to Buyer as per 4.1.
 - Notification that this is a conditional change should appear on the Product Change Notice.
 - All known conditions shall be listed clearly and prominently in the change notice text (reason for change field).

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- Except for completion timeframes, all of the items listed for A changes also apply to said conditional changes. Completion timeframes may be extended when the known conditions may not have immediate impact but could become apparent over time. Any timeframe extensions should be granted at the sole discretion of Buyer.

CLASS B CHANGE

The Class B designation applies to changes made to incorporate improvements in design resulting in better operation, improved testing and maintenance, longer life, service improvements, cost reductions to Buyer, and addition of new features. Class B changes are applied to manufactured products and may be recommended for application to existing equipment in the field. The decision to purchase and apply Class B changes is the responsibility of Buyer. In the event Buyer elects to purchase plug-ins without the Class B changes being made, after the effective date for such changes, Supplier agrees to furnish Buyer plug-ins without the Class B changes during the term of the applicable Buyer/Supplier contract.

CLASS D CHANGE

The Class D designation applies to changes that incorporate minor new features and design improvements that do not affect the existing functionality, or other minor service improvement and test capabilities not sufficiently significant to require a Class B change. Component changes which involve physical or electrical specification differences to the replaced component and require a "product identification change" are considered Class D.

- Routine changes in a product documentation or technical specification; i.e., status/availability, titles, clarification of notes, and correction of drawing error should also be Class D. Buyer should be notified of class D changes as per Section 6.9.
- Class D changes should not affect compatibility, Buyer cost, or Buyer use of the product. These changes are applied only to Supplier owned products and are not recommended for application to existing equipment in the field. However they may, on a non-billable basis, be applied to a product during the repair process when necessary for factory test purposes

CLASS 'OTHER' CHANGES

The Class 'Other' change class is used when a change is required to facilitate manufacture or to effect a supplier cost reduction. This change requires that there be no product ID change. It covers changes not classified as A, B or D and does not impact form, fit or function, or diminish product reliability and quality. See sec. 6.10 for supplier notification responsibilities.

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In no event shall Supplier ship product subject to a class A or B change without the prior written approval of Buyer.

5. Billing For Changes

In the following paragraphs, the party normally responsible for financing each type of change is identified. Contracts between Buyer and its suppliers may alter this section. Product liability or government regulations may also affect billing responsibility.

Class A changes shall be paid for by the Supplier and provided on a non-billable basis to Buyer.

Class B changes normally are provided only on receipt of an Order from Buyer. Payment shall be made by Buyer when the change has been completed according to contractual agreements.

Class D changes normally have no billing associated. If there should be some unusual circumstance that causes Buyer to request the a Class D change be applied, the billing shall be negotiated.

Class "other" changes do not have associated billing.

Except in emergency situations, such as machine outage, extensive equipment failure or unsafe conditions, Buyer's Maintenance engineer should be consulted to authorize any delays. The Maintenance Engineer will immediately act to resolve the problem and expedite the application of the Class A change.

6. Supplier Responsibilities

The Supplier shall submit a Product Change Notice at least thirty (30) days prior to the release date of all Product Changes except in cases of Class A changes which require notification immediately upon determining that a Class A change is to be made. A sample Product Change Notice form is provided at the end of this document. The form may be used as is, or modified for use, but all items of information listed on the form must be separately defined in the product Change Notice.

NOTE: Any exceptions must be agreed to by Buyer. Exceptions will not apply to documentation corrections, changes in status and availability, or changes that require product marking changes.

Supplier shall provide a monthly list of other than A or B changes by product ID. This list shall be distributed to the Telcordia (formally Bellcore) Quality Representative and/or Buyer, as so directed by Buyer.

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The Supplier shall be responsible for developing a MOP for accomplishing the change. It will be prepared by the installation supervisor or installer, and agreed to by Buyer (paragraphs 2.15 and part 9).

Where the original equipment was installed by the supplier, the supplier shall be responsible for installing the change in all Buyer locations affected by the PCN. The change shall be completed in a timely manner, usually within 180 days of the release of the Product Change Notice (see paragraph 6.4 and 6.5 for exclusions).

Where extensive plug-in substitution is being done using pack rotation (see paragraph 2.14), with agreement from Buyer, the time period for Class A changes can be extended to 1 year. for conditional Class A changes, at Buyer's option, the time period may be extended beyond the 1 year period.

In certain circumstances Buyer may elect or agree to install the change at one or more locations themselves. The agreement and change procedure shall be negotiated between the Supplier and Buyer. All material required, detailed installation instructions, and any drawings or other documentation required, shall be supplied to Buyer prior to the release date of the Product Change. For Class A changes, such materials will be furnished at no charge.

At the time of Buyer notification, the Supplier shall provide the following 25 separate items of information. No omissions or deviations from the applicable items of information shall be allowed unless changed or excluded in the contract negotiated between buyer and the Supplier.

1. Supplier Information: Supplier's name, address, technical contact name and phone number.
2. Product Change Notice Number: Number conforming to a single sequential number scheme used by Supplier.
3. Issue Date of Change: Date Product Change Notice is transmitted.
4. System of Product Description: Description of the product affected; e.g., BMS 700, 2W Line Card.
5. New Product Code: Unique identity of the changed product; e.g., Circuit Pack CP 11101, Series 1, List 4.
6. Old Product Code: Unique identity of the product being changed; e.g., Circuit Pack CP 11101, Series 1, List 3.
7. New CLEI Code(s): The alpha-numeric CLEI code(s) assigned to the changed product.

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8. Old CLEI Code(s): All CLEI codes of equipment associated with this change (see item 9).
9. Associated products or Changes Affected: Coordinated product changes that must be applied in conjunction with, or prior to , this change.
10. Drawing Number: The circuit (schematic or equivalent) drawing number and issue that incorporates the change; this is the number of the principal drawing supplied to the Buyer through normal distribution, that shows the circuit and/or the equipment being changed.
11. Product Change Classification: classification of the change (A, B, D, or other).
12. Classification Substantiation: Details of why this classification is appropriate.
13. Reason for Change: Detailed explanation of why the change is necessary, for example:
 - A. Is change a manufacturing change or does it fix a service trouble condition or safety hazard?
 - B. What are the symptoms of the condition being corrected?
14. Description of Change: Installation details of change, for example:
 - A. What is to be changed?
 - B. How is it to be changed?
 - C. How can change be tested/verified?
15. Effect of Change: Description of the effect of the change on:
 - A. Service
 - B. Transmission
 - C. Traffic
 - D. Maintenance
 - E. Reliability
 - F. Product Technical Specifications (defined in paragraph 2.7)

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G. Control Specifications (defined in paragraph 2.8)

H. Safety.

16. Material Affected: Apparatus, wiring, plug-in circuits, etc., affected by the change
17. Documentation Affected: List of drawings, programs, practices, manuals, nomenclature, etc., affected by the change.
18. Supplier implementation Date: Date after which all newly manufactured products will incorporate the change.
19. Modification Completion (Expiration) Date (for conditional Class A changes only): Date after which Supplier terminates responsibility for applying the change, providing modification material, etc., on a non-billable basis.
20. Modification Location: Supplier recommendation for field or factory installation of the change.
21. Modification Cost: Applicable Buyer cost per unit or other pricing information (Class B and D only).
22. Location and Quantity of Equipment: Quantity shipped to the Buyer. If the Supplier has access to these records, the location and quantity of working or spare equipment owned by the Buyer, that requires the change. For Class A changes, if more space is required, a report showing the location and quantity could be attached. This report should be available upon request for Class B and D changes.
23. Attachments: Any supplementary reference information relative to the change.
24. Comments: Additional comments or recommendations of the Supplier.
25. Implementation Schedule: Supplier will provide, as applicable.

In the event that Buyer and Supplier fail to reach agreement on any such changes to be made by Supplier, then Buyer shall have the right to terminate any or all Purchase Orders for products affected by such change without penalty or obligation of any kind.

If the equipment being changed requires a CLEI code change, per TR-STS-000485, the Supplier shall contact Telcordia (formally Bellcore), Language Standards Division, for the new code in accordance with the procedures outlined in TR-STS-000485. In general, a CLEI code change is required if:

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- I. Any component on the plug-in product has been changed for another of different value or tolerance, regardless of the interchangeability and functional characteristics of the resulting product.
- II. A changed plug-in product is not bidirectionally interchangeable physically, electrically or functionally, with its predecessor. (A 7-digit CLEI code change is required for Class A and B changes).
- III. A changed hard-wired product is functionally different (features added, deleted or changed) from its predecessor.
- IV. A manufacturer's part, model, drawing, issue/vintage or identification number is changed for that product.
- V. A manufacturer's company name is changed.

Only the standard markings as described in the documents listed in paragraph 2.10 will be acceptable for PCNs.

NOTE: There may be instances where a product will require testing or inspection marking when it has not been changed.

One instance of this could be when a change only affects a limited number of the product and a screening or physical examination is required to identify the affected units. To avoid constant rechecking or future identification problems, a marking change would be required to identify it as having been examined and found not to require the change.

The supplier shall furnish monthly status reports to Buyer for all Class A changes on plug-ins and hard-wired equipment that are to be installed or tracked to completion by the Supplier (see part 11.0). This report will contain the following 11 items:

- I. Product Change Notice Number
- II. Identity of the product
- III. Model or part number and issue
- IV. CLEI code, if applicable
- V. Date Product Change Notice sent to Buyer
- VI. Material ship date
- VII. Installation or application responsibility

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- VIII. Locations at which change is to be made (if the Supplier maintains these records)
- IX. Date completed, by location
- X. Changes on hold at any location. Are they held by Supplier or Buyer?
- XI. If the change is on hold, why? i.e., waiting for material, manpower, related work, etc.

The Supplier shall furnish Buyer a monthly summary report listing all Product Change Notices, by product ID code, released to Buyer during the previous 12 months (see Part 11.0). This report will contain the following 6 items:

- 1. Product Change Notice Number
- 2. Issue date of Change
- 3. Drawing Number
- 4. Change Classification
- 5. Modification Expiration Date.
- 6. Brief description of Change.

The Supplier shall furnish Buyer a monthly report, by product ID, listing all changes other than Class A or B. This report shall contain the following items:

- 1. Issue date of change
- 2. Identity of the product
- 3. Description of the change

If the Supplier cancels a change, Buyer shall be notified through the same channels that announced the change. The Supplier must state the reason for cancellation and what action is to be taken in locations where the change may already have been implemented.

If a Supplier changes the Status/Availability (defined in paragraph 2.13) of a product, the change shall be announced in a Class D Product Change Notice or other notification system as agreed to by Buyer. This information must be available to Buyer for ongoing and future Product Change Notice implementation plans.

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Defects found by Buyer verification/audits (see Part 10.0) of an installed product change, shall be corrected by the Supplier within 30 days of notification of the defect. Defects that are serious and/or service affecting shall be corrected immediately.

Buyer may have publications addressing engineering and installation requirements or standards in that Company. If so, these requirements/standards shall be strictly adhered to.

All changes to the office records not corrected or changed during the engineering of the job shall be marked and manually changed by the installer and returned to Buyer.

If the Supplier has access to or maintains the office equipment record that defines the equipment affected by the product change, they are responsible for updating the records. If the Supplier does not have access to the office equipment records they shall provide the product change information and the related equipment information to Buyer's Maintenance Engineer.

The Supplier shall furnish buyer a copy of all drawings and associated documents that are affected by the Product Change. The documents shall be supplied to each Buyer location that will have the product change applied.

7. Buyer's Responsibility

The Buyer Maintenance Engineer, or other organization designed by Buyer, will review the Product Change Notice for completeness and evaluate the change. Some considerations used in the evaluation are:

1. Need to make the change
2. Compatibility
3. Function
4. Who will pay for the change
5. How will the change be implemented
6. Will it be done at Buyer or Supplier location
7. What are the possible service impacts
8. Is the purpose of the change clearly defined
9. Is the Product Change classification valid

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10. If the change is to be made by Buyer, is it described in sufficient detail as to be easily understood
11. Is the test and verification information adequate.

If Buyer's Maintenance Engineer in review finds fault with any of the above items, Buyer shall notify the Supplier in writing. The reasons for finding fault will also be stated. Notwithstanding Buyer's response, the Suppliers and its manufacturer remain solely responsible for the design and manufacture of its products.

A Buyer representative will participate in preparing a proper MOP (part 9.) to implement the change and ensure that it is followed until the job completes.

Class A changes will be promptly implemented. The right to waive or defer the implementation of any Class A change for any reason is retained by Buyer's Maintenance Engineer or other designated personnel. If the implementation is waived or deferred, written notification to the Supplier is required.

For safety or service protection, it may be necessary for the maintenance forces to halt or defer the installation of a change. The maintenance Engineer should be notified. If the Supplier is installing the change, and the need to halt or defer the change results in failure to meet a previously arranged installation date, every effort would be made to establish a new date at the time of delay.

If a Supplier maintaining the central office equipment records is not installing the change, Buyer's Maintenance Engineer or other designated personnel will report to that supplier's designated Change Notice Administrator, all change notice completions, by location. Any tracking of this type of change by the Supplier must be negotiated by the Buyer.

8. Additional Effort Required for Deferrable Plug-Ins

When a Product Change Notice is received for deferrable plug-ins, and the locations are unknown by the Supplier it is necessary that Buyer, using the CLEI code, search the Plug In Control (PIC) computer inventory to determine the locations and quantities of the circuits to be changed. The installation method usually used is the "pack rotation method" (see par. 2.15).

Two additional methods of making changes to deferrable plug-ins are:

1. Buyer notifies the Supplier of the locations and quantities of the circuits, and the Supplier makes on-site modifications.

2. The Supplier sends Buyer a number of modification kits equal to the number of circuits to be modified and Buyer installers implement the change.

The Supplier should recommend, in the Product Change Notice, the method for implementing the change. The method may be dictated by the need to make shop adjustments or tests, or the need to test in the field. Buyer will choose a method of implementation that is in its best interest, considering cost and service.

9. Method of Procedure (MOP)

When installation work is being performed on a near Buyer's working central office/transport systems equipment, every effort must be made to prevent the occurrence of a service interruption. A written MOP (paragraph 2.16) shall be used to minimize the possibility of a service interruption. The MOP shall be prepared in accordance with Ameritech document AM-TR-EEN-000011, **Ameritech Installation Administrative and Workmanship Requirements**.

The MOP and any revisions shall be agreed upon and signed by the appropriate Buyer representative and the Supplier's installation representative at each work location prior to the beginning of installation. It will include all expected equipment outage times as well as the methodology to be used for the change process. The Supplier's representative is the installer supervisor. Buyer's representative should be the Maintenance Engineer or designated operations contact. MOPs should be prepared on a Buyer form or those Supplier forms authorized by Buyer.

The following 16 areas of concern shall be thoroughly understood prior to establishing a method of procedure. All of the times, tests, procedural steps and precautions should be detailed in the MOP.

1. The service-affecting hazards involved and degree of risk imposed.
2. Safety precautions to be used and any special equipment required for safety will be listed.
3. The installation methods, tools, and test sets to be used.
4. The experience of the personnel on the job.
5. Protection required for the equipment and tools.
6. The time during which the various work steps will be performed.
7. Which work steps will require notification to the Buyer representative before starting?

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8. Procedures to be followed and tests to be made before additional or modified equipment is connected to any working equipment. This is particularly true of equipment to be connected to common power supply leads or any other common leads that would affect the integrity of other equipment
9. Steps to be taken by the installer before any alarm associated with the work is disconnected.
10. Procedures to be followed to ensure that the stamping and/or fuse record will be checked with the proper drawing before any fuse is removed at the request of the installer.
11. Time of day or night the equipment removed from service must be restored.
12. Reports of progress required during the scheduled interval and, in case of unforeseen delays, what additional measures can be taken to insure that the equipment will be restored to service on time.
13. Identification of save stop points if the work will extend beyond a work shift and/or if trouble is encountered with working equipment.
14. Which work steps will require the assistance of Buyer's employees?
15. Installer handbook (or other) tests that are applicable for all wiring operations. If Supplier documents are referenced in the MOP, they must be furnished to Buyer. If Supplier documents cannot be furnished because of proprietary information, the pertinent narrative in the document must be included in the MOP.
16. Name, Title, Location and Telephone Number (including emergency number) of responsible installation and Buyer supervisors.

All work shall be completed between the hours covered in the procedure as agreed upon by the installation supervisor and Buyer personnel. Work on critical equipment such as common current supplies and Central Processor Equipment should be performed when a service affecting error and restoration would have minimum impact.

the MOP shall include adequate testing time after a transition or modification. If the actual transition or modification extends beyond the estimated allotment of time, testing shall not be compromised to comply with the estimated schedule on the MOP.

10. Verification and Audit

Buyer's Maintenance Engineer, or other representative designated by Buyer will perform Quality Assurance Audits on the applied Product Change Notice. The audit will ascertain whether:

1. The change has been applied according to the Product Change Notice and any associated drawings and documentation.
2. Installation workmanship conforms to prescribed guidelines.
3. The modified equipment is performing as documented.
4. The proper bar code label with the correct CLEI code is affixed to the modified equipment.

Defects found by the audit shall be corrected by the Supplier within thirty (30) days. Serious defects will be corrected immediately.

11. Notification

Product Change Notices, Change Notice Summaries and status reports (paragraph 6.8 and 6.9) shall be sent by the Supplier to Buyer's predetermined locations. Minimum quantities and mailing locations shall be defined in the contract between Buyer and the Supplier.

Status and summary reports may be delivered by mechanized systems. All mechanized systems must be agreed upon and approved by Buyer.

A completion notification, by work location, shall be sent to a location designated by Buyer. The completion notification shall be signed by both the Supplier's representative responsible for making the change and Buyer's representative designated as responsible for accepting and approving the Change. This notification should be received within 7 working days of the change completion.

12. Mechanized Product Change Notification Systems (Objective)

It is an objective that Mechanized Product Change Notification Systems shall follow the same PCN format as non-mechanized systems and must include all of the applicable Product Change Notice information listed in paragraph 6.6 and the Product change Notice Status and Summary information listed in paragraph 6.8 and 6.9. This Objective represents a goal to be achieved and may be reclassified as a requirement in the future. Any mechanized system will only be acceptable if approved by Buyer. Access to these systems and adequate copies of the PCN shall be provided on a non-billable basis. The number of copies required should be negotiated by the Buyer.

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The following format should be used for mechanized output of a PC:

| Item # | Field Name | |
|--------|------------|--|
| 1.1 | VENNAME | Vendor's Company Name (30 char) |
| 1.2 | VENADDR1 | Vendor's Address (30 char) |
| 1.3 | VENADDR2 | Vendor's City (30 char) |
| 1.4 | VENADDR3 | Vendor's State (2 char) |
| 1.5 | VENADDR4 | Vendor's Zip (10 char) |
| 1.6 | VENTECHNM | Vendor's Technical Contact Name (20 char) |
| 1.7 | VENPHONE | Vendor's Technical Contact Phone No. (12 char) |
| 1.8 | VENABB | Bellcore Vendor Abbreviation (4 char) |
| 2.1 | PCN | Product Change Notice Number (25 char) |
| 2.2 | PCN1 | Product Change Notice No. Issue (3 char) |
| 2.3 | VCI | Vendor's Change Identification (20 char) |
| 2.4 | VCP | Vendor's Change Procedures (20 char) |
| 3.0 | ISSUED | PCN Issue Date-Mo/Da/Yr (8 char) |
| 4.1 | MAJSY | Major System Affected (72 char) |
| 4.2 | SUBSYS | Subsystem Affected (72 char) |
| 4.3 | WARETYPE | Hardware y/n (1 char)P |
| 4.4 | WARETYPE1 | Firmware y/n (1 char) |
| 4.5 | WARETYPE2 | Software y/n (1 char) |
| 4.6 | WARETYPE3 | Pluy-in y/n (1 char) |
| 5.1x | NEWPROD | New Product Code (30 char) |
| 5.2x | NEWFIRM | New Firmware Code (30 char) |
| 6.1x | OLDPROD | Old Product Code (30 char) |
| 6.2x | OLDFIRM | Old Firmware Code (30 char) |
| 7.0x | NEWCLEI | New CLEI Code (10 char) |
| 8.0x | OLDCLEI | Old CLEI Code (10 char) |
| 9.0x | ASSOCPROD | Associated Products (72 char) |
| 10.1x | DRAWNBR | Drawing Number (72 char) |
| 10.2x | RFDDRW | Reference Drawing (72 char) |

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| | | |
|-------|-----------|--|
| 11.0 | CLASS | Classification of Change (2 char) |
| 12.0x | CLASSREAS | Reason for Classification (72 char) |
| 13.0X | CHGREASON | Reason for Change (72 char) |
| 14.1X | CHG DESC | Description of Change (72 char) |
| 14.2X | CHGVER | Change Verification Procedures (72 char) |
| 15.1 | SAFETY | Safety Notice y/n (1 char) |
| 15.2 | FIRE | Fire Notice y/n (1 char) |
| 15.3 | SERVICE | Service Affecting y/n (1 char) |
| 15.4 | TRANS | Transmission Affecting y/n (1 char) |
| 15.5 | MTCE | Maintenance Affecting y/n (1 char) |
| 15.6 | REL | Reliability Affecting y/n (1 char) |
| 15.7 | POWER | Power Affecting y/n (1 char) |
| 15.8 | TRAFFIC | Traffic Affecting y/n (1 char) |
| 15.9x | EFFDES | Expansion on Effect of Change (72 char) |
| 16.0x | MATERIAL | Disposition of cust controlled eq units (72 char) |
| 17.0x | DOCUM | Documentation Affected (72 char) |
| 18.0 | VENIMPL | Vendor Implementation Date-Mo/Da/Yr (8 char) |
| 19.0 | COMPL | Modification Completion (Expiration) DateMo/Da/Yr (8 char) |
| 20.1 | MODLOC | Modification Location (72 char) |
| 20.2 | TRIALED | (F)ield/(L)ab trailed or (N)a (1 char) |
| 21.1 | INSTHRS | Installation Hours (A,B&D) (72 char) (Installation Time Requirement Data) |
| 21.2 | MATCOST | Material Cost (72 char) (Material Cost Installation Data) |
| 22.0 | LOCATION | Title of Vendor's Location/Quantity Rept (15 char) |
| 23.0x | ATTCH | Attachments (72 char) |
| 24.0x | COMMENTS | Comments (72 char) |

(x) starts at 1 and counts up until the field has finished.

The following status information should be downloaded monthly on a per office basis:

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| Item # | Field Name | Description |
|--------|------------|---|
| 1.1 | PCN | Product Change Number (30 char) |
| 1.2 | PCN1 | Product Change Notice No. Issue (3 char) |
| 1.3 | VCI | Vendor Change Identification (20 char) |
| 2.0 | OTC | Operating Telephone Company (20 char) |
| 3.1 | STATE | State (2 char) |
| 3.2 | CITY | City (20 char) |
| 3.3 | BASE_NO | Office Base Number (6 char) |
| 3.4 | VEN_OFFICE | Vendor's Office Name (15 char) |
| 3.5 | CLLI | Bellcore CLLI Code (11 char) |
| 4.0 | VEN_ORD | Vendor's Order Number (7 char) |
| 5.1 | STATUS | Current status (1 char) N-Not working-Awaiting Material H-Telco Hold V-Vendor Hold W- Workable-Material Has Shipped C-Completed X-Cancelled |
| 5.2x | STAT_EXP | Status Explanation (72 char) |
| 6.0 | STAT_DATE | Status Date-Mo/Da/Yr (8 char) |
| 7.0 | INST_RESP | Installation Responsibility (3 char) IC-Installers Change ICR-Installers Change Rotation TC-Telco Responsible for Change DD-Document Distribution |
| 8.0x | REMARKS | Remarks (72 char) |

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(x) starts at 1 and counts up until the field has finished. Although the format is different, all of the information required for status reports as outlined in 6.08 should be contained in this and previous downloads from the vendor.

13. References

Following is a list of Ameritech and Telcordia (formally Bellcore) documents referenced in this document. The Issue number and date of the documents shall be as referenced in the Current Buyer/Supplier agreement. In the absence of reference in such an agreement, the most current issue shall prevail:

AM-TR-EEN-000011, Ameritech Installation Administrative and Workmanship Requirements

TR-ISD-000325, Equipment Information Required From Suppliers for Operations Systems

TR-STC-000485, COMMON LANGUAGE Equipment Coding Processes and Guidelines

TR-STC-000383, Generic Requirements for COMMON LANGUAGE Bar Code Labels

TR-EOP-000208, Stored Program Control Proposed Software Documentation Requirements for CO Switching Systems

TR-TSY-000454, Supplier Documentation for Network Elements

FR-NWT-000064, LATA Switching Systems Generic Requirements (LSSGR)

TR-TSY-000541, Measurements and Administration, plus Revisions, (Section 8.2-8.6 of LSSGR)

TR-TSY-000519, Documentation, (Section 19 of LSSGR)

Technical Advisories (TAs) are documents that describe Telcordia (formally Bellcore's) preliminary views of proposed generic requirements. To obtain TAs, write to:

Bellcore Document Registrar

445 South Street - Room 2J125

P.O. Box 1910

Morristown, NJ 07962-1910

(Insert Your Company Logo)

Product Change Notice

EO-005
(11-88)

| | | |
|--|----------------------------------|------------------------------|
| 1. Supplier Information | | 2. Product Change Notice No. |
| 3. Issue Date of Change | 4. Product Identity | |
| 5. New Product Code | 6. Old Product Code | |
| 7. New CLEI Code(s) | 8. Old CLEI Codes | |
| 9. Associated Products Or Changes Affected | | |
| | | |
| 10. Drawing No. | 11. Change Classification | |
| 12. Classification Substantiation | | |
| | | |
| 13. Reason For Change | | |
| | | |
| 14. Description Of Change | | |
| | | |
| 15. Effect Of Change | | |
| | | |
| 16. Material Affected | | |
| 17. Documentation Affected | | |
| 18. Supplier Implementation Date | 19. Modification Expiration Date | |
| 20. Modification Location | | |
| 21. Modification Cost | | |
| 22. Location And Quantity Of Equipment | | |
| | | |
| 23. Attachments | | |
| 24. Comments | | |
| | | |
| | | |
| | | |

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 Change Notification Legend

| | |
|--|--|
| 1. Supplier Information | Supplier's Name, Address, Technical Contact Name and Tel. No. |
| 2. Product Change By Supplier. Notice No. | Number Conforming To A Single Sequential Numbering Scheme Used |
| 3. Issue Date of Change | Date Product Change Notice is Transmitted. |
| 4. Product Description 24 Foot Aluminum Ladder. | Description of the Product Affected, e.g., BMS 700, 2W Line Card; Or |
| 5. New Product Code Series 1, List 4. | Unique Identity Of The Changed Product, e.g., Circuit Pack CP 11101, |
| 6. Old Product Code 11101, Series 1, List 3. | Unique Identity Of The Product Being Changed, e.g., Circuit Pack CP |
| 7. New CLEI Code(s) | The Alpha-numeric CLEI Code(s) Assigned To The Changed Product. |
| 8. Old CLEI Codes 9). | CLEI Codes Of All Equipment Associated With This Change (See Item |
| 9. Associated Products With, Or Prior To, This Change. Or Changes Affected | Coordinated Product Changes That Must Be Applied in Conjunction |
| 10. Drawing No. The Change, e.g., | The Circuit (Schematic) Drawing Number And Issue That Incorporates SD 11101-01, Issue 11). |
| 11. Change Classification | Classification Of The Change (A, B, or D). |
| 12. Classification Substantiation | Details Of Why the Proposed Classification is Appropriate. |
| 13. Reason For Change | Detailed Explanation Of Why The Change is Necessary, i.e.: a. Is Change a Manufacturing Change Or Does It Fix a Service Trouble Condition? b. What Are The Symptoms Of The Condition Being Corrected? |
| 14. Description Of Change | Installation Details Of Change, i.e.: a. What Is To Be Changed? b. How Is It To Be Changed? c. How Can Change Be Tested/Verified? |

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| | |
|--|--|
| 15. Effect Of Change | Description Of The Effect Of The Change On: a. Service b. Transmission c. Traffic d. Maintenance e. Reliability f. Commercial Specifications g. Control Specifications h. Safety |
| 16. Material Affected | Apparatus, Wiring, Circuit Packs, Etc. That Are Affected By The Change. |
| 17. Documentation | List Of Associated Drawings, Programs, Practices, Manuals, Nomenclature, Etc., Affected By The Change. |
| 18. Supplier Implementation Date | Date After Which At Newly Manufactured Products Will Incorporate The Change. |
| 19. Modification Expiration Date | For Conditional Class A Changes Only – Date After Which Supplier Terminates Responsibility For Applying the Change, Providing Modification Material, Etc. On A Non-Billable Basis. |
| 20. Modification Location | Supplier’s Recommendation For Field Or Factory Installation Of The Change. |
| 21. Modification Cost | Class B And D Only – Cost per Unit or Other Pricing Information |
| 22. Location And Quantity Of Equipment | (If Supplier Has These Records) the Location And Quantity Of Equipment, In The Hands Of The Operating Company, That Requires the Change. |
| 23. Attachments | Any Supplementary reference Information Relative To The Change. |
| 24. Comments | Additional Comments Or Recommendations Of The Supplier. |
