# ALARMS FOR CARRIER AND RADIO FACILITIES

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## 1. GENERAL

1.01 This practice:

- Lists the alarms for carrier and radio facilities.
- Identifies the alarm as:
  - Major or minor.
  - Audible.
  - Visible on a shelf or bay or aisle.
- Designates if the alarm:
  - Can be reset.
  - Requires remote monitoring during unstaffed periods at any location specified by the telephone operating company (Telco).

NOTE: If the central office (CO) is staffed 24 hours a day, remote monitoring is not required.

## 2. ACRONYMS

2.01 The acronyms used in this practice are as follows:

| ACRONYM | MEANING |
|---|---|
| A/D | Analog-to-Digital |
| AC | Alternating Current |
| AMP | Amplifier |
| CARS | Centralized Alarm Reporting System |
| CU | Circuit Description |
| CHAN | Channel |
| CO | Central Office |
| CSF | Central Switching Facility |
| CXR | Carrier |
| DIST | Distributor |
| DMX | Digital Multiplexer |
| ETV | Educational Television |
| FDM | Frequency Division Multiplex |
| GEN | Generator |
| GP | Group Pilot |
| IF | Intermediate Frequency |
| osc | Oscillator |
| PCF | Pulse Cycle Fraction |
| PCM | Pulse Code Modulation |
| PROT | Protection |
| PSK | Phase Sequence Relay |
| PWR | Power |
| REG | Regular |
| KY | Relay |
| Rx SC | Receive Switch Card |
| SF | Single Frequency |
| SG | Super Group |
| SWX | Standing Wave Expander |
| SW INDC | Standing Wave Indicator |

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| ACRONYM | MEANING |
|---|---|
| TELCO | Telephone Operating Company |
| VF | Voice Frequency |
| WECO | Western Electric Company |
| WG | Wave Guide |
| XMIT | Transmit |
| XMT | Transmitter |

3. OVERVIEW

3.01 The types of alarm indications are not defined in this practice because they can vary with the manufacturer. Therefore:

| THIS TYPE OF INDICATION. . . | MAY BE. . . |
|---|---|
| Visible | In lamps of various colors. |
| Audible | A bell, gong, buzzer, chime, horn, etc. |

3.02 Consult the manufacturer's documentation and Job drawings for:

- Details about the specific equipment.
- The wiring of alarms.

3.03 Alarms for remote monitoring are arranged by using:

- Alarm sending equipment (originating end).
- Alarm receiving equipment (terminating end).

3.04 Use a centralized alarm reporting system (CARS); e.g., ADC 2711, Lenkurt System 51. The Telco's needs will determine the type to use.

3.05 Remote capability should be available.

3.06 Local requirements will determine whether an alarm indication will be extended.

References

3.07 Other practices dealing with equipment alarms are:

| NUMBER | TITLE |
|---|---|
| 205-000-000 | Equipment Alarms Overview |
| 205-000-001 | Alarms for Electromechanical Switching Equipment |
| 205-000-002 | Alarms for Electronic Switching Equipment |
| 205-000-003 | Alarms for Toll Equipment |
| 205-000-005 | Alarms for Switching Equipment Support Systems |
| 205-000-006 | Alarms for Periphieral Equipment |

3.08 Additional information is available in these documents:

| NUMBER | TITLE |
|---|---|
| CD-95417 | Alarm Sending Circuit |
| CD-95418 | Alarm Receiving Circuit |
| 650058-823-001 | ITT FTS-3 Optical Span Line Technical Manual |
| GTE Practice 342-461-102 | Carrier System GTE Lenkurt 46A-46A3, Channel Bank Equipment |
| GTE Practice 342-461-107 | Carrier System GTE Lenkurt 46A-46A3, Frequency Generation Equipment |
| GTE Practice 342-461-108 | Carrier System GTE Lenkurt 46A-46A3, Group, Supergroup, and HF Jackfield |
| GTE Practice 342-461-114 | Carrier System GTE Lenkurt 46A-46A3, Mastergroup Equipment |
| GTE Practice 342-461-116 | Carrier System GTE Lenkurt 46A-46A3, Line Equipment |
| GTE Practice 342-461-130 | Converter, GTE Lenkurt 4691B FDM/PCM Converter - Description, Engineering, and Ordering |

4. GENERAL TYPES OF ALARMS FOR CARRIER AND RADIO

4.01 The general types of alarms for carrier and radio are listed here, divided into equipment alarm classifications. The alarms are:

- Visible and audible.
- Remotable.
- Not resettable.

| ALARM CONDITION | STATUS |
|---|---|
| "N1/N2" Carrier Group Alarm | Major |
| "N3" Major | Major |

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| ALARM CONDITION | STATUS |
|---|---|
| "N3" Minor | Minor |
| "ON" Carrier Group Alarm | Major |
| "X" Carrier Group Alarm | Major |
| 150 Volt Converter Failure | Major |
| 46A CXR Gen. Failure-Both | Major |
| 46A CXR Gen. Failure-One | Minor |
| 46A Group Pilot Alarm | Minor |
| 46A Oscillator Failure | Major |
| 46A Regulation Failure | Minor |
| 46A Summary Alarm-Major | Major |
| 46A Summary Alarm-Minor | Minor |
| 757 Channel Failure | Major |
| 757 Channel Lockout | Minor |
| 757 Channel Service Failure | Major |
| 757 Channel Switch | Minor |
| 757 Prolonged Switch Request | Major |
| 757 Protection Channel Failure | Major |
| 757 Protection Channel Separator | Minor |
| 757 Signal Path Failure | Major |
| 757 Switch Incomplete | Major |
| Alarm Reporting-Change of State | Minor |
| Alarm Reporting-System Failure | Major |
| Amplifier Failure (both amps) | Major |
| Amplifier Failure (one amp) | Minor |
| 0960 All Trunks Busy | Minor |
| 0960 Incoming PCM Loss | Major |
| D960 Intra-Call Failure | Minor |
| D960 Outgoing PCM Loss | Major |
| D960 Persistent Service Request | Minor |
| D960 Power to Remote Loss | Minor |
| D960 Remote Battery Temperature | Minor |
| 0960 Remote Housing Door Open | Minor |
| D960 Remote PWR Supply Failure | Clajot |
| D960 VF Continuity Loss | Major |
| Fuse Panel | Major |
| Order Wire Signaling Circuit | Minor |
| Oscillator Failure (both OSC) | Major |
| Oscillator Failure (one USC) | Minor |
| Radio ETV Line Amp Failure | Major |
| Radio Helix Current | Major |
| Radio IF Insert Alarm | Major |
| Radio OFF-Frequency | Major |
| Radio Rec Noise Threshold | Major |
| Radio Rec Power | Major |
| Radio Receiver | Major |
| Radio Sub-Carrier Failure | Major |
| Radio Transmitter | Major |
| Radio Video Loss | Major |
| Raaio XMT Power | Major |
| Radio XMT Power Failure | Major |
| Shelf Fuse | Major |
| Span Line Transfer | Minor |
| Spare Line Failure | Major |
| Subscriber CXR-Group Alarm | Major |
| Tower Lights-AC Failure | Major |
| Tower Lights-Beacon failure | Major |
| Tower Lights-Flasher Bypass | Minor |
| Tower Lights-Side Lights Failure | Minor |
| Trunk Type "T" Carrier Group Alarm | Major |
| Wave Guide-High/Low Pressure | Minor |
| Wide Band Modem | Major |

NOTE: Assign the carrier fuse alarm to the CO major or minor alarm classification when separate audible and visible indications are not provided for. When multi-category alarm reporting systems are employed, this condition should be reported separately.

## 5. TYPES OF ALARMS FOR RADIO

5.01 Radio alarms can be classified into one of two groups, regardless of equipment type or priority. The action to be taken when an alarm is indicated depends largely on which of these types apply:

| ALARM TYPE | DESCRIPTION AND RESPONSE |
|---|---|
| Site specific | The alarm reports an equipment fault or condition at one location only, which may or may not be associated with other alarms. Examples of this type of alarm are a:<br>• Blown fuse.<br>• Rectifier failure.<br>• Wave guide alarm.<br>Response and action is site specific as outlined in the site specific record. |
| System specific | The alarm reports a fault or failure of a:<br>• Multiple location system.<br>• Group of related systems.<br>A site specific alarm may be associated with the cause of a system specific alarm. Examples of this type of alarm are:<br>• 71E R012 RXA P. L. from PGRG01 alarm, reported at VANC01.<br>• CHAN BSBD from NN1M01 failure reported at VCTA01.<br>Response and action depend on:<br>• The system involved.<br>• The locations involved.<br>• Whether or not a specific location is reporting a possible cause alarm.<br>• Services affected, if any.<br>• Possibilities for switching or patching alternate systems into service.<br>This should be outlined on the system specific records and, as applicable, site specific records. |

### Wave Guide Pressure

5.02 The wave guide pressure a arms:

- Are:
  - Audible.
  - Not resettable.
  - Not visible on a shelf, bay, or aisle.
- Require remote monitoring.

5.03 The alarms are as follows:

| TYPE | STATUS |
|---|---|
| Low Pressure | Minor |
| High Pressure | Major |
| Room Temperature | Major |

### Tower Aircraft Warning Light

5.04 The alarm for the radio tower aircraft warning light requires remote monitoring and is:

- Not visible on a shelf, bay, or aisle.
- Audible.
- Major.
- Not resettable.

### Type 75

5.05 The Type 75 facility alarms are:

- Transmit.
- Receive.
- Insert.

5.06 These alarms require remote monitoring and are:

- Visible on a shelf or bay and aisle.
- Audible.
- Minor.
- Resettable.

### Type CTR 108

5.07 The Type CTK 108 facility alarms are:

- Transmit.
- Receive.

5.08 These alarms require remote monitoring and are:

- Visible on a shelf or bay and aisle.
- Audible.
- Minor.
- Not resettable.

6. TYPES OF ALARMS FOR FIBER OPTICS

6.01 Alarms for fiber optic communication systems are visible on a shelf or bay.

6.02 Exhibit 1 lists the alarms.

Fiber Optic Communication Systems Alarms

| TYPE OF ALARM | IS THE ALARM VISIBLE ON THE AISLE? | IS THE ALARM AUDIBLE? | STATUS | IS THE ALARM RESETTABLE? | IS REMOTE MONITORING REQUIRED? |
|---|---|---|---|---|---|
| FIBER OPTIC TERMINAL (ITT FTS-3) | | | | | |
| Excessive Error | Yes | Yes | Major | Yes | No |
| Laser | No | No | Minor | No | No |
| Loss of Frame | Yes | Yes | Major | Yes | No |
| Loss of Signal | Yes | Yes | Major | Yes | No |
| Power Supply | Yes | Yes | Major | Yes | No |
| Span Loss of Signal | Yes | Yes | Major | Yes | No |
| M90 FIBER OPTIC ALARMS | | | | | |
| Fault* | Yes | No | Minor | No | Yes |
| Minor* | Yes | No | Minor | No | Yes |
| Receiver | Yes | No | Minor | No | Yes |
| Rx SC* | Yes | No | Minor | No | Yes |
| Switch Status* | Yes | No | Minor | No | Yes |
| Transmitter | Yes | No | Minor | No | Yes |
| Unit* | Yes | Yes | Minor | No | Yes |

NOTE: Connect all alarms designated as "*" and remote them as one minor alarm. This scheme assumes that there are backup systems.

Exhibit 1

7. TYPES OF ALARMS FOR CARRIER

7.01 Alarms for carrier facilities:

- Are audible.
- Are visible on a shelf or bay and aisle.
- Require remote monitoring, except for 759A carrier alarms.

7.02 The alarms for carrier facilities are:

| TYPE OF ALARM | STATUS | IS THE ALARM RESETTABLE? |
|---|---|---|
| WECo 400A SWITCH REGULAR CHANNEL | | |
| Carrier | Minor | No |
| Noise | Minor | No |
| Output | Minor | No |
| PSF | Minor | No |
| SF | Major | No |
| swx | Minor | No |
| WECo 400A SWITCH PROT CHANNEL | | |
| Carrier | Minor | No |
| Noise | Minor | No |
| output | Minor | No |
| WECo 400A SWITCH EXERCISER | | |
| Exerciser | Minor | No |
| Fuse alarms | Minor | No |
| 11A SIGNALING | | |
| Single Frequency Supply | Minor | No |
| Single Frequency Supply | Major | No |
| 757C CARRIER | | |
| CSF | Major | No |
| PCF | Minor | No |
| PSR | Minor | No |
| SW INC | Minor | No |

Continued

| TYPE OF ALARM | STATUS | IS THE ALARM RESETTABLE? |
|---|---|---|
| 759A CARRIER | | |
| Fuse | Minor | No |
| Temperature | Minor | No |
| DMX 13C CARRIER | | |
| Major | Major | Yes |
| Minor | Minor | Yes |
| 46A3 FREQUENCY GENERAL EQUIPMENT | | |
| Alarm Logic Unit | Both | Yes |
| Amplifier Unit | Both | Yes |
| Fuse (Power Dist) | Major | No |
| Master OSC | Both | Yes |
| Sync OSC | Major | Yes |
| Sync OSC | Minor | Yes |
| Sync OSC | Both | Yes |
| 46A3 CHANNEL BANK | | |
| Fuse (Pwr dist) | Major | No |
| Group Pilot OSC | Both | Yes |
| Pulse Gen (4kh2) | Both | Yes |
| Ry Pilot Alarm | Minor | Yes |
| 8248KH2 OSC | Both | Yes |
| 46A3 MULTIPLEX-GPLSG | | |
| Fuse | Major | No |
| Group Regulator (pilot) | Both | Yes |
| Group Reg. (high range) | Both | Yes |
| Group Reg. (low range) | Both | Yes |
| Receive Amplifier | Both | Yes |
| Signal XMT Summing Amp | Both | Yes |
| Signal CXR Gen | Both | Yes |
| Signal Regulator (pilot) | Both | Yes |
| Signal Rec Dist. Amp | Both | Yes |
| Power | Major | Yes |
| -20 V Power | Major | Yes |
| Transmit Amplifier | Both | Yes |
| 46A3 LINE EQUIPMENT | | |
| Fuse | Major | No |
| Line Amp Unit | Both | Yes |
| 46A3 MASTERGROUP EQUIPMENT | | |
| Alarm Logic Unit | Both | Yes |
| Amplifier Unit | Both | Yes |
| Fuse (Pwr Dist) | Major | No |
| Mastergroup Demod. High Unit | Both | Yes |
| Mastergroup Demod. Low Ring Alarm | Both | Yes |
| Mastergroup Demod. Pilot | Both | Yes |
| Mastergroup CXR Gen | Major | No |
| Power Module | Both | Yes |
| Ty Line Amp | Both | Yes |
| 4691B A/D CONVERTER | | |
| Analda Pilot Failure | Both | Yes |
| CXR Gen Group Amp | Minor | Yes |
| Digital Framing | Bot tl | Yes |
| Fuse (Pwr Dist) | Major | Yes |
| Pilot Amp | Both | Yes |
| Power Supply | Major | Yes |
| Single-Frequency OSC | Both | Yes |
| THE 91A CARRIER System | Major | No |
| THE 91A CARRIER AND REPEATER Errors/Signal Loss | Minor | NO |

8. TYPES OF SUBSCRIBER CARRIER

8.01 Alarms for subscriber carrier require remote monitoring and are:

- Visible on a shelf or bay and aisle.
- Audible.
- Resettable.

8.02 The alarms are as follows:

| TYPE OF ALARM | STATUS |
|---|---|
| 82A Carrier | Minor |
| D960 Carrier | Minor |
| 84A Carrier | Major |