

BUILDING EQUIPMENT MAINTENANCE INSPECTION  
AND QUALITY MEASUREMENT

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. INSPECTION REPORT FORM AND CHECKLIST. . . . .	2
3. PRELIMINARY PROCEDURE . . . . .	3
4. INSPECTION--GENERAL . . . . .	3
5. HEATING SYSTEMS . . . . .	4
6. COOLING SYSTEMS . . . . .	5
7. COOLING TOWERS/CONDENSERS . . . . .	6
8. ELECTRICAL SYSTEMS. . . . .	7
9. AIR-HANDLING SYSTEMS. . . . .	8
10. TEMPERATURE CONTROL SYSTEMS . . . . .	9
11. PLUMBING SYSTEMS. . . . .	10
12. ELEVATORS . . . . .	10
13. PACKAGE UNITS . . . . .	11
14. MAINTENANCE SCHEDULES, RECORDS . . . . .	11
15. SUMMARY . . . . .	12
EXHIBIT 1 . . . . .	13

1. GENERAL

1.01 This section replaces AT&T Section 770-200-105. It is issued to set forth the building equipment maintenance inspection guidelines for Southwestern Bell. Building equipment maintenance may be defined as those efforts exerted on an ongoing basis to preserve the life and appearance of the building electrical and mechanical equipment and to ensure that optimum operating efficiency is obtained.

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 This section outlines a procedure for inspecting and evaluating the quality of the building equipment maintenance in telephone buildings as well as the thoroughness in which it is accomplished. It is intended to serve as an aid to those supervisory personnel responsible for the administration of this function on an in-house basis as well as those responsible for the administration of contracts with building equipment maintenance contractors.

1.04 It is intended that inspections will be made by personnel qualified to recognize and evaluate the physical condition and operation of the building electrical and mechanical equipment to:

- (1) Determine the quality of the building equipment maintenance function as a whole and whether its phases are in good balance.
- (2) Determine that contractors are performing the building equipment maintenance function in strict accordance with the executed contract.
- (3) Determine that the work is being performed in accordance with approved practices.
- (4) Recommend corrective measures if the quality of the work, methods employed or work frequencies require them.

The plan for inspection, outlined herein, does not supersede day-to-day supervisory observations and correction of defective building equipment maintenance items, but should supplement those inspections.

1.05 All references made herein were current at the time of this issue. Subsequent changes in reference material should be researched by the user.

1.06 Frequency of Inspections: Building equipment inspections are scheduled at such intervals as local conditions may require. It is recommended, however, that this inspection format be used as part of an operational review and by local management to complete a building inspection at least annually at each location.

2. INSPECTION REPORT FORM AND CHECK-LIST

2.01 For the purpose of inspection, building equipment maintenance is divided into ten classifications as follows:

- (1) Heating Systems
- (2) Cooling Systems
- (3) Cooling Towers/Condensers
- (4) Electrical Systems
- (5) Air-Handling Systems
- (6) Temperature Control Systems
- (7) Plumbing Systems
- (8) Elevators
- (9) Package Units
- (10) Maintenance Schedules, Records

2.02 An inspection report, Form SW-6342 (Exhibit 1), shall be used for guidance in making a building equipment maintenance inspection.

2.03 Form SW-6342 is available through hard copy requisition procedures. The minimum order through these procedures is 500 copies of the form.

2.04 A copy of this form completed for a typical inspection along with example checklists are shown in Exhibit 1. The form provides a list of the classifications as well as space for general information regarding the building under review. Part two of this form contains a checklist and space for notes. Typical conditions to be observed are contained in paragraphs 5.01 through 14.02 of this section and in the checklist.

2.05 The form also includes a table for evaluating building equipment maintenance results. Numerical values of 0 through 10 are established for each of the ten classifications and each will be multiplied by the assigned weighting factor. The inspection plan thus indicates whether a balanced job is being done and, if not, where attention is necessary to bring all classifications to the desired level. This may be accomplished by additional or re-directed effort, more supervisory attention, better administration of service contracts, or other actions.

2.06 The conditions observed under each classification are initially considered in terms of Higher Than Objective Band (10.0-8.6), Within the Objective Band (8.5-8.0), Lower Than Objective Band (7.9-6.0) and Unsatisfactory Band (5.9-0) with the appropriate quality rating number assigned. For example, a clean, painted, properly lubricated and adjusted condenser operating efficiently is rated in the Objective Band. Further definition of the bands is as follows:

- (H) Higher Than Objective Band--More than demands and possibly not cost effective.

(O) Within the Objective Band--Within service demands and cost effective.

(L) Lower Than Objective Band--Less than satisfactory service level, needs improvement.

(U) Unsatisfactory Band--Unsatisfactory service level, immediate attention required.

2.07 Care should be exercised in assigning quality ratings to the various classifications. They should be assigned on an impartial basis and should be based on conditions that exist at the time of the inspection although consideration should be given to the elapsed time since the last scheduled day-to-day operation. For instance, a cooling tower basin could not be expected to be clear of sludge, etc, if the last scheduled cleaning operation was 30 days prior to the inspection date.

2.08 Appearance is a factor that tends to affect the assignment of quality ratings. Generally, a good building equipment maintenance job and good appearance go hand-in-hand, but occasionally equipment may look poorly because of advanced age. In determining quality ratings, care should be exercised not to penalize an otherwise good maintenance job because of poor appearance attributed to the normal functional obsolescence of the equipment.

2.09 A factor that will influence the total quality value is the absence of one or more classifications in a particular building. For example, if an equipment building does not have any elevators, enter the letters N/A (not applicable) in the column adjacent to this classification. The absence of a rating in the missing classification would reflect a total quality value lower than if it were included. This is compensated for by

dividing the Total Quality Value by the Total Weighting Factor.

2.10 A single form may be used for one building. In the case of a large multistory building, several systems may be selected as representative of the entire building. On subsequent inspections, other systems should be considered for inspection. The selected systems should be noted on the form. A quality result for the entire building is determined from the conditions observed on the selected systems. If a more detailed report is desired or the size of the building warrants, each system may be entered on separate forms. These can be averaged and consolidated on a single form to establish an overall quality index for the building.

### 3. PRELIMINARY PROCEDURE

3.01 Before starting the actual inspection, fill in the data on the inspection form (i.e., the date, building name, address, city and state, geographic location code, sector/zone, building square feet, building group, and building equipment maintenance information--if in-house, the estimated work hours per month or if contract, the estimated contract cost per month).

### 4. INSPECTION--GENERAL

4.01 Inspection is performed by observation of all items shown in the following paragraphs and of any others observed while walking around and through the building from roof to basement.

4.02 The items listed in subsequent paragraphs, under headings corresponding to the subdivisions on the inspection form, are those points that should be considered in rating the quality of the building equipment maintenance job being performed.

4.03 It should be noted that the following list is by no means complete, but will serve as a base for evaluating the building equipment maintenance job being performed. Items found that are not the responsibility of the building equipment maintenance force should be noted for future reference to the appropriate party. These items should not influence the quality rating assigned to the particular classification.

4.04 The checklist contains a column adjacent to the principal conditions to be observed (STATUS). This column is for indicating the condition and should be noted [✓(deviation), OK, N/A (not applicable)]. The remaining column is for notes made on items requiring attention and may be used for reference in preparing annual budgets for building equipment repair work.

5. HEATING SYSTEMS--CLASSIFICATION NO. 1

5.01 Boiler/Furnace Rooms:

- .General appearance of boiler room and heating system is clean and orderly.
- .Room not used for storage or combustibles.
- .Combustion air inlets unobstructed.

.Painted for protection of room and equipment.

.Floors free of dust, dirt, stains.

.Equipment, piping free of dust, dirt.

.Boiler emergency cutoff switch and extinguisher located outside door.

5.02 Boilers:

.Controls and fuel piping in accordance with Section 770-210-300 (Low Pressure Heating Boilers, Basic Fundamentals and Bell System Standards).

.Visible and audible alarms are removed to attended facility and are being routinely tested.

.Safety and relief valves are of approved type and appear in good condition.

.Try lever has pull chain, and discharge piping provides safety for operator.

.High pressure limit control is mounted perpendicular to antisiphon loop.

.Combustion analysis is being performed and combustion efficiency is being maintained at proper level.

.Tubes are clean and show no signs of leaks.

.Doors fit tight and access plates show no evidence of leaks or corrosion.

.Boiler and pipe insulation in good condition.

.Water column, gauges, thermometers in good condition and easily read.

- .Water feeders and level controls in good condition (being routined).
  - .Water treatment in use when conditions warrant.
  - .Operating temperatures and pressures are within correct range.
  - .Pumps, routined, lubricated, etc.
  - .Idle boilers laid up properly.
  - .Housing clean, free of dust, etc.
- 5.03 Furnaces:
- .Controls and fuel piping in accordance with EL 72. (Combustion safeguards for heating boilers and furnaces.)
  - .Heat exchanger in good condition.
  - .Limit controls in good condition.
  - .Combustion analysis being performed and efficiency being maintained at proper level.
  - .Belts, motors routined, lubricated, etc.
  - .Filters clean, changed regularly.
  - .Housing clean, free of dust, etc.
  - .Alarms are being routinely tested.
- 5.04 Steam, Hot Water Piping Systems:
- .Piping is color coded or identified in accordance with Section 760-510-150 (Piping Identification).
  - .Valves are tagged.
  - .Valve charts are available.
- .Steam traps being maintained.
  - .Condensate return temperatures are in proper range.
  - .Expansion tank is equipped with gauge glass.
  - .Tank shows adequate air cushion.
- 5.05 Radiators, Convectors, etc:
- .Clean and free of dust.
  - .Free of leaks.
  - .No unusual noises, etc.
- 5.06 Electric Heating Units:
- .Air-flow switches installed and in good condition.
  - .Heat transfer surfaces clean and unobstructed.
  - .Heating elements in proper operating condition.
  - .Operating at rated voltage.
6. COOLING SYSTEMS--CLASSIFICATION NO. 2
- 6.01 Cooling Equipment Rooms:
- .General appearance of cooling equipment room and system is clean and orderly.
  - .Floors free of dust, stains, etc.
  - .Painted for protection of room and equipment.
- 6.02 Refrigeration Circuit and Controls:
- .Moisture indicator in proper range.

- .Sight glass free of bubbles.
- .Leaks tested on regular basis.
- .Liquid line strainers checked for restriction (temperature differential, frost, etc).
- .Gauges and thermometers in proper range and in good condition, readable.
- .Insulation on suction and liquid lines adequate and in good condition.
- .Expansion valves checked for proper adjustment, superheat, etc.
- .Piping is identified, flow direction indicated, etc.
- .Valves are tagged and charts available.

6.03 Compressors:

- .Checked for unusual operation, such as continuous running, frequent starting and stopping, running lightly loaded.
- .Checked for unusual noise, vibration, loose drive couplings, belts, etc.
- .Belt or coupling guards in place and secured.
- .Head, suction, and oil pressures in normal range.
- .Oil level in correct range.
- .Motor starters appear in good condition.
- .Running time of multiple compressors being equalized.

- .Proper operation of unloaders (throttles without hunting or surging).
- .Proper operation of compressor valves.

6.04 Chilled Water Piping Systems:

- .Proper differential in chilled water temperature.
- .Piping is color coded and identified, flow direction indicated, etc. (Refer to Section 770-510-150.)
- .Valves are tagged and charts available.
- .Valves are being routined and exercised.
- .Pumps and motors are being routined.
- .Pump shaft movement within acceptable limits, coupling not defective.

- .No excessive leakage at pump packing glands, seals, etc.
- .Check valves operate properly.

7. COOLING TOWERS/CONDENSERS--CLASSIFICATION NO. 3

7.01 Air-Cooled Condensers:

- .No unusual noise or vibration.
- .Belts matched and properly adjusted.
- .Guards adequate and in place.
- .Motors clean and properly lubricated.
- .Condenser coil face clean to permit proper airflow.

- .Metal work is painted and free of rust and corrosion.
- 7.02 Water Cooled Condensers:
- .Tubes clean.
- .Water temperature differential checked for proper range.
- .Water treatment in use where conditions warrant.
- 7.03 Evaporative Condensers:
- .No unusual noise or vibration.
- .Fan belt drive and motor properly adjusted and lubricated.
- .Guards adequate and properly secured.
- .Coil clean and free of scale.
- .Air-inlet screen, spray nozzles, pump screen, and pump are clean and free of obstructions.
- .Pump shaft movement within acceptable limits, coupling not defective.
- .Metal work is painted and free of rust and corrosion.
- .Water temperature differential in proper range.
- .Pumps routined and in good condition.
- .Water treatment in use where conditions warrant.
- .Basin clear of algae, sludge.
- 7.04 Cooling Towers:
- .No unusual noise or vibration.
- .Fan belt drive and motor properly adjusted and lubricated.
- .Pump shaft movement within acceptable limits, coupling not defective.
- .Pump inlet screen clean.
- .Waterspray checked for proper distribution.
- .Tower fill not combustible and in good condition.
- .Bleed-off rate regulated and checked.
- .Gear case oil level in proper range.
- .Basin clear of algae, sludge.
8. ELECTRICAL SYSTEMS--CLASSIFICATION  
NO. 4
- 8.01 Switchgear, Switchboard Rooms:
- .Room free of dust and debris.
- .Not used for storage.
- .Floors, walls, and equipment painted for protection.
- .Single-line diagram posted, up-to-date.
- .Proper security in effect.
- 8.02 Main Switchgear, Switchboard:
- .Switchboard components identified.
- .Enclosure covers in place.

- .Equipment free of hum, vibration.
  - .Voltages stenciled or marked on components.
  - .Switchgear being routined per Section 770-280-601 (Maintenance and Testing of Building Switchgear).
  - .Bus bars are not discolored due to loose connections and/or excessive heat.
  - .Spare fuses adequate and accessible.
- 8.03 Panels-(Feeder and Distribution)-  
Conduits:
- .Panels identified, i.e., power, lighting, etc.
  - .All circuits identified.
  - .Panels and conduits not excessively heated.
  - .Conduit properly anchored.
  - .Voltages stenciled on panels.
- 8.04 Motor Control Centers:
- .Operating without excessive hum and noise.
  - .Starters free of dust, buildup, etc.
  - .Contacts not excessively pitted, worn.
  - .Arc shields not cracked or damaged.
  - .Heaters sized properly.
  - .Wiring harnessed neatly and properly identified.

- .No loose connections.
  - .Coil insulation not deteriorated.
  - .Armature and coil free of hum.
  - .Control transformers properly identified and in good operating condition.
- 8.05 Lighting Fixtures and Outlets:
- .Receptacle and switch covers properly installed.
  - .Lighting fixture diffusers, lenses, reflectors are in place and in good condition.
  - .Ballast hum not excessive.
  - .No ballast leaks.
- 8.06 Grounding:
- .All receptacles are grounded type.
  - .Central office ground in good condition.

9. AIR-HANDLING SYSTEMS--CLASSIFICATION  
No. 5

- 9.01 Fan Rooms:
- .General appearance of fan rooms and air-handling systems are clean and orderly.
  - .Walls and equipment painted for protection.
- 9.02 Plenums, Filter Banks, etc:
- .Plenums are clean.

.Insulation adequate and in good condition.

.Static pressure gauges are calibrated and operating.

.Filters clean. (Being changed based on static pressure parameters.)

.Humidifier sprays are functioning properly.

9.03 Fans (Supply and Exhaust):

.No unusual noise or vibration.

.Fan belt drive and motor properly adjusted and lubricated.

.Fan belts matched.

.Fan bearings checked for excessive temperature.

.Belt guards are adequate and secure.

.Sheaves do not show excessive wear or misalignment.

.Motors clean, airflow not obstructed.

.Fan blades clean, free of buildup.

.Fans are interlocked with fire detection system.

9.04 Coils, Dampers, Ductwork, Diffusers:

.Piping and valves free of leaks.

.Valves are rountined and exercised.

.Coils are clean and unobstructed.

.Dampers function properly.

.Thermometers and gauges read accurately and are coordinated.

.Piping and ductwork runs identified.

.Air-supply diffusers and outlets discharge air without noticeable drafts.

.Air is discharged without objectionable noise.

10. TEMPERATURE CONTROL SYSTEMS--  
CLASSIFICATION NO. 6

10.01 Compressed Air Supply:

.Compressors are functioning properly. Oil level OK.

.No unusual noise or vibration.

.Motor and drive belt properly adjusted and lubricated.

.Guards adequate and properly secured.

.Receivers are free of moisture.

.Dryers and/or after coolers are functioning properly.

.Air consumption does not appear abnormal.

10.02 Controls and Panels:

.Control devices are protected against damage.

.Gauges, meters, and indicators are in good operating condition and readable.

.Control panels free of dirt and debris.

- .Controls calibrated on routine basis.
- .Changes in control points noted.
- .Room thermostats provided with locking covers.

11. PLUMBING SYSTEMS--CLASSIFICATION  
NO. 7

11.01 Domestic Water Supply Systems:

- .Domestic water piping free of leaks.
- .Main shutoff valve location identified and accessible.
- .Domestic water pump packing glands and/or seals not leaking excessively.
- .House tank operating with an adequate cushion and in good condition.
- .No water hammer or chatter.
- .Faucets not leaking.
- .Valve chart posted and valves tagged.
- .Flushometers operating properly with no leaks.
- .Hot water heater provided with proper relief valve and in proper working order.
- .Sprinkler system in good working order.

11.02 Waste Piping and Systems:

- Waste lines not leaking and are properly supported.

- .No waste system odors from dry traps.
- .Sump pumps and ejectors routined regularly, no excessive noise.
- .Pump shaft movement within acceptable limits, coupling not defective.
- .Pump alternators functioning properly.

- .Sump pump alarms remoted, in proper working order.
- .Check valves operating and holding properly.
- .Shutoff valves being routined and exercised (no leaks).

12. ELEVATORS--CLASSIFICATION NO. 8

12.01 Machine Rooms, Shafts, Pits:

- .Room free of dust, debris.
- .Proper security in effect.
- .Current wiring diagrams available.
- .Room and equipment painted for protection.
- .No storage of flammable liquids, etc.
- .Guards installed where necessary.
- .Pits clean.

12.02 Machinery:

- .No unusual noise or vibration.
- .No heat build-up.
- .No lubricant leaks.
- .Cables not excessively lubricated.

.Cables do not show excessive wear or breaks.

.No excessive sheave wear in grooves.

.Brushes not arcing or overly worn.

.Commutators smooth and undercut.

.Wiring jumpers not evident.

.Control cabinet doors and covers in place.

## 12.03 Operating:

.Car accelerates and decelerates smoothly.

.Car brakes smoothly.

.Car levels properly (without hunting).

.Car door operates properly.

.Inspection card posted.

.Emergency telephone stop and alarm in working order.

.Maintenance contract work verification up-to-date.

13. PACKAGE UNITS--CLASSIFICATION NO. 9

## 13.01 General:

.No unusual noise or vibration.

.Cleanliness and general appearance good.

.Piping and valves free of leaks.

.Motor and belt drives properly adjusted and lubricated.

.Belt guards adequate and secure.

.Coils are clean and unobstructed.

.Filters clean and changed regularly.

.Thermometers and gauges read accurately and are coordinated.

.No oil leaks.

.Operating pressures in normal range.

.Sight glass free of bubbles and/or indicating dry.

.Compressors not short cycling or running continuously.

.Condensation pan and drains clear of obstructions.

14. MAINTENANCE SCHEDULES, RECORDS--  
CLASSIFICATION NO. 10

## 14.01 Drawings, Operating Instructions, BSP's:

.Up-to-date building prints and control schematics available on site.

.Operating instructions, complete and available.

.BSP's available for use.

## 14.02 Maintenance Schedules and Logs:

.An inventory of mechanical equipment is available and up-to-date.

.Refrigeration, ventilation, and boiler logs in use and up-to-date.

- .Repairs to equipment being recorded for future reference.
- .A formal preventive maintenance program in use.
- .Records of preventive maintenance are kept on site or at control center.

.Enter in the Band space the alphabetical band (H, O, L, or U) which corresponds to the numerical Quality Index.

.Note any unusual conditions on the bottom of the form that contribute to a low quality value.

15. SUMMARY

15.01 The following is a summary of the overall inspection and quality measurement process.

- .Fill in the general data regarding the building on Form SW-6342.
- .Walk through the building, noting all deviations on the checklist.
- .Review the checklist, completing all spaces. (Ensure that all items are checked.)
- .Enter numerical ratings in the Quality Rating (Q.R.) column for all classifications rated.
- .Multiply each Q.R. by the assigned weighting factor (WF) and enter the resultant figure in the Quality Value (Q.V.) column.
- .Add the WF's of all classifications rated.
- .Total the individual Q.V.'s and enter in the Total Q.V.
- .Divide the Total Q.V. by the Total W.F. and enter the result in the Quality Index space.

## EXHIBIT 1

SW-6342  
(8-83)Date 10-6-83Retain 1 year, until supercoded  
(REF B.S.P. 770-200-901SW)

## BUILDING EQUIPMENT MAINTENANCE INSPECTION

Building Name BIG CENTRAL OFFICEAddress 123 ROADCity & State HOME TOWN, MISSOURIGeo. Loc. Code 220000Sector/Zone 2/CENTRALBldg. Sq. Ft. 10,824 Bldg. Group 2Building Equipment Maintenance InformationIf In-house, Est. Work Hrs./Mo 22If Contract, Est. Contract Cost/Mo. 0

	H	O	L	U	
	Higher Than Objective	Objective Band	Lower Than Objective	Unsatisfactory Band	
	10.0—8.6	8.5—8.0	7.9—6.0	5.9—0	
	Classification		Q.R.	W F	Q.V.
1	Heating Systems		7.0	1.5	10.50
2	Cooling Systems		8.2	1.5	12.30
3	Cooling Towers/ Condensers		8.3	.5	4.15
4	Electrical Systems		8.3	1.5	12.45
5	Air Handling Systems		7.9	1.5	11.85
6	Temperature Control Systems		8.3	1.0	8.30
7	Plumbing Systems		8.0	1.0	8.00
8	Elevators		N/A	.5	—
9	Package Units		N/A	.5	—
10	Maintenance Schedules, Records		8.1	.5	4.05
			Total Q.V.	<input checked="" type="checkbox"/>	71.60
			Total W.F.	9.0	<input checked="" type="checkbox"/>

Q.R.—Quality Rating (Use Tenths)  
Q.V.—Quality Value (Use Hundredths)  
W.F.—Weighting Factor

$$\text{Quality Index} = \frac{\text{Total Q.V.}}{\text{Total W.F.}} = \boxed{8.0} \text{ Band } \boxed{0}$$

Note Any Unusual Condition Below

COMPUTER ROOM BEING BUILT ON 1<sup>ST</sup> FLOOR  
(COMPLETION DATE, 12-1-83)

**BUILDING EQUIPMENT MAINTENANCE CHECKLIST**

Check Items As Indicated  
Status (✓ Dev., OK, N/A)

Bldg. BIG CENTRAL OFFICE

Floor \_\_\_\_\_

1. HEATING SYSTEMS	STATUS	LOCATION, NOTES, ETC.
<b>.01 Boiler/Furnace Rooms</b>	<del>OK</del>	
General Appearance Clean, Orderly	OK	
Combustion Air Inlets OK		
Room, Equip. Painted For Protection		
Equipment, Piping Free Dust, Dirt		
Emergency Cutoff Sw. O/S Door		
<b>.02 Boilers</b>	<del>OK</del>	
Controls, Fuel Piping Proper	OK	
Alarms Remoted To Attended Locations	OK	
Safety Valves Apprvd, Good Cond.	OK	
Try Lever, Discharge Piping Safe	✓	SEE NOTE
Hi Press. Limit Control Mnted. Properly	OK	
Combustion Analysis Performed	✓	NOT PERFORMED
Tubes Clean, No Leaks	✓	SOOT IN TUBES
Doors Tight, No Access Plate Leaks	OK	
Boiler, Pipe Insulation, Good Cond.	OK	
Water Column, Gauges, Etc., Good Cond.	OK	
Feeders, Level Controls Good Cond.	OK	
Water Treatment In Use	OK	
Operating Temp's. Press, Proper Range	OK	
Pumps Routined, Lubed, Etc.	OK	
Idle Boilers Laid Up Properly	OK	
Housing Clean, Etc.	OK	
<b>.03 Furnaces</b>	<del>OK</del>	
Controls, Fuel Piping Proper	N/A	
Heat Exchanger Good Condition		
Limit Controls Good Condition		
Combustion Analysis Performed		
Belts, Motor Routined		
Filters Clean, Changed Regularly		
Housing Clean		
Alarms Tested		
<b>.04 Steam, Hot Water Piping Systems</b>	<del>OK</del>	
Piping, Proper Identification	OK	
Steam Traps Maintained	OK	
Condensate Temp. In Range	OK	
Expansion Tank Has Gauge Glass	N/A	
Tank Shows Proper Air Cushion	N/A	
<b>.05 Radiators, Convectors</b>	<del>OK</del>	
Clean, Free of Dust	OK	
Free Leaks, Unusual Noises	OK	
<b>.06 Electric Heating Units</b>	<del>OK</del>	
Air Flow Switches Good Cond.	OK	
Clean, Free of Dust		
Heating Elements Good Cond.		
Operating At Rated Voltage		

NOTES: TRY LEVER CHAIN OFF PULLEY & TRY LEVER WILL NOT OPERATE.

## EXHIBIT 1

Page 2

2. COOLING SYSTEMS	STATUS	LOCATION, NOTES, ETC.
<b>.01 Cooling Equip. Rooms</b>	<del>XXXX</del>	
Gen. Appearance Clean & Orderly	OK	
Floors Free Dust Stains, Etc.	↓	
Room & Equip. Painted For Protection	↓	
<b>.02 Refrigeration Circuit &amp; Controls</b>	<del>XXXX</del>	
Moisture Indicator In Proper Range	OK	
Sight Glass Free Bubbles	OK	
Checked For Leaks On Regular Basis	OK	
No Restriction In Liquid Strainers	OK	
Gauges, Thermometers In Good Cond.	✓	SUCTION GAUGE DEFECTIVE
Line Insulation Adequate, Good Cond.	OK	
Expansion Valves In Proper Adjust.	OK	
Piping, Flow Identified, Valves Tagged	OK	
<b>.03 Compressors</b>	<del>XXXX</del>	
No Unusual Operation	OK	
No Unusual Noises, Vibration	OK	
Belt, Coupling Guards Good	OK	
All Pressures In Normal Range	OK	
Oil Level Normal Range/Leaks	OK	
Motor Starters Good Condition	OK	
Multiple Running Time Equalized	N/A	
Unloader Operation Proper	OK	
Valves Operation Proper	OK	
<b>.04 Chilled Water Piping Systems</b>	<del>XXXX</del>	
Chilled Water - Proper Temp. Diff.	N/A	
Valves Routed, Tagged	↓	
Pumps Lubricated	↓	
Pump Shaft Movement OK	↓	
Pump Coupling Not Defective	↓	
No Excessive Leakage At Packing	↓	
Check Valves Operate OK	↓	
<b>3. COOLING TOWERS/</b>	STATUS	
<b>CONDENSERS</b>		
<b>.01 Air Cooled Condensers</b>	<del>XXXX</del>	
No Unusual Noise, Vibration	OK	
Belts Matched, Adjusted	OK	
Guards Adequate, In Place	OK	
Motors Clean, Lubricated	OK	
Coil Face Clean	✓	DIRT ON COIL
Metal Painted, Free Rust	OK	
<b>.02 Water Cooled Condensers</b>	<del>XXXX</del>	
Tubes Clean	N/A	
Water Temp. Diff. Proper	N/A	
Water T-ment In Use	N/A	

NOTES:

.03/.04 Evaporative Condensers /	STATUS	LOCATION, NOTES, ETC.
Cooling Towers	<del>STATUS</del>	
No Unusual Noise, Vibration	N/A	
Belt Drive Adjusted, Lubed	↓	
Guards Adequate, In Place		
Coil Clean, Free Of Scale		
Air Inlet Screen, Pump Screen Clean		
Spray Nozzles Operate OK		
Sump Clear Of Sludge		
Pump Shaft Movement OK		
Metal Work Painted, Free Rust		
Water Temp. Diff. Proper		
Pumps Routed, Good Cond.		
Water T-ment In Use		
Tower Fill Not Combustible		
Tower Fill Good Condition		
Bleed Rate Properly Controlled		
Gear Case Oil Level OK		
Basin Clear Of Algae, Sludge		
4. ELECTRICAL SYSTEMS	STATUS	
.01 Switchgear, Switchbd. Room	<del>STATUS</del>	
Room Free Dust, Debris	OK	
Room Not Used For Storage	↓	
Room & Equip. Painted For Prot.		
Single Line Diagram Posted		
Proper Security In Effect	<del>STATUS</del>	
.02 Main Switchgear, Switchbd.	<del>STATUS</del>	
Components Identified	OK	
All Covers In Place	↓	
Equip. Free Hum - Vibration		
Voltages Marked On Components		
Switchgear Routed Per B.S.P.		
Buss Bars Not Discolored		
Spare Fuses Adequate	<del>STATUS</del>	
.03 Panels - Conduits	<del>STATUS</del>	
All Circuit Panels Identified	OK	
No Excessive Heat - Panels, Etc.	↓	
Conduit Properly Anchored		
Voltages Stenciled On Panels	<del>STATUS</del>	
.04 Motor Control Centers	<del>STATUS</del>	
No Excessive Hum, Noise	OK	
Starters Free Dust, Debris	↓	
Contacts Good Cond.		
Arc Shields Good Cond.		
Heaters Sized Properly		
Wiring Neat, Proper I.D.		
No Loose Connections		
Coil Insulation Good Cond.		
Armature & Coil Free Hum		
Transformers I.D., Good Cond.	↓	

NOTES:

EXHIBIT 1

.05 Lighting Fixtures, Outlets	STATUS	LOCATION, NOTES, ETC.
Recept., Switch Covers In Place	OK	
Diffusers, Lenses Good Cond.	↓	
Ballast Hum Not Excessive	↓	
No Ballast Leaks	↓	
<b>.06 Grounding</b>	<del>OK</del>	
All Receptacles Grounded	OK	
C.O. Ground Good Condition	✓	THERE IS CORROSION AT GROUNDING PT.
<b>5. AIR HANDLING SYSTEMS</b>	STATUS	
<b>.01 Fan Rooms</b>	<del>OK</del>	
Gen. Appearance Clean, Orderly	✓	BOXES BLOCKING ENTRANCE.
Room, Equip. Painted For Prot.	OK	
<b>.02 Plenums, Filter Banks</b>	<del>OK</del>	
Plenums Clean	OK	
Insulation Adequate, Good Cond.	↓	
Filter Gauges Good Cond.	↓	
Filters Clean - Change Basis OK	↓	
Humidifier Sprays Properly	↓	
<b>.03 Fans</b>	<del>OK</del>	
No Unusual Noise, Vibration	OK	
Belt Drive, Motor Adjusted, Lubed	✓	BELT LOOSE ON UNIT #2
Fan Bearings Good Cond.	OK	
Belt Guards Adequate, Secure	↓	
Sheaves Not Worn	↓	
Motors Clean, Good Air Flow	↓	
Fan Blades Clean	↓	
Fan Interlocked W/Fire Detection	↓	
<b>.04 Coils, Dampers, Ductwork, Diffusers</b>	<del>OK</del>	
Piping & Valves Free Leaks	OK	
Valves Routed	↓	
Coils Clean, Unobstructed	↓	
Dampers Function Properly	↓	
Thermometers, Gauges OK	↓	
Piping, Ductwork ID'd	↓	
Air Supply Outlets Operate OK	↓	
No Excessive Air Noise	↓	
<b>6. TEMPERATURE CONTROL SYSTEMS</b>	STATUS	
<b>.01 Comp. Air Supply</b>	<del>OK</del>	
Compressor Function Proper	N/A	
Compressor Oil Level OK	↓	
No Unusual Noise, Vibration	↓	
Motor, Belt Drive, Adjusted, Lubed	↓	
Belt Guards Adequate	↓	
Receivers Free Moisture	↓	
Dryers Function Proper	↓	
Air Consumption Normal	↓	

NOTES:

		LOCATION, NOTES, ETC.
<b>.02 Controls - Panels</b>	<del>OK</del>	
Devices Protected From Damage	OK	
Gauges, Meters Good Cond.	OK	
Panels Free Dust, Debris	OK	
Calibrated On Routine Basis	OK	
Control Point Changes Noted	OK	
Room T-Stats Have Covers	OK	
<b>7. PLUMBING SYSTEMS</b>	STATUS	
<b>.01 Domestic Water Supply Systems</b>	<del>OK</del>	
Piping Free Of Leaks	OK	
Main Valve Accessible, I.D.	✓	VALVE NOT MARKED
No Excess Leaks Pump Packing	OK	
House Tank, Adequate Cushion	N/A	
No Water Hammer, Chatter	OK	
Faucets Not Leaking	OK	
Valves Tagged, Chart Posted	OK	
Flushometers Operate OK	OK	
Proper Relief Valve, Water Heater	OK	
Sprinkler System Good Cond.	N/A	
<b>.02 Waste Piping &amp; Systems</b>	<del>OK</del>	
Lines Not Leaking, Proper Support	OK	
No Odors From Dry Traps	OK	
Sump Pumps, Ejectors Routined	OK	
Pump Shaft Movement Proper	OK	
Pump Alternators Functioning	OK	
Sump Alarms Remoted, OK	OK	
Check Valves Operate OK	OK	
Shutoff Valves, Routined, OK	OK	
<b>8. ELEVATORS</b>	STATUS	
<b>.01 Machine Rms, Shafts, Pits</b>	<del>OK</del>	
Room Free Dust, Debris	N/A	
Proper Security In Effect	↓	
Current Wiring Diagrams Avail.		
Equip., Room Painted For Prot.		
No Flammable Liquids Stored		
Guards Adequate		
Pits Clean	<del>OK</del>	
<b>.02 Machinery</b>	<del>OK</del>	
No Unusual Noise, Vibration	N/A	
No Heat Build-up	↓	
No Lubricant Leaks		
Cables Not Excess. Lubed		
No Excess Wear, Breaks In Cables		
No Excess Wear, Sheaves		
Brushes Not Arcing, Worn		
Commutators Smooth, Undercut		
No Wiring Jumpers		
Cabinet Doors Etc., In Place		

NOTES:

## EXHIBIT 1

Page 6

.03 Operating	<del>XXXX</del>	LOCATION, NOTES, ETC.
Car Accelerates Smoothly	N/A	
Car Brakes Smoothly	↓	
Car Levels Properly		
Inspection Card Posted		
Emergency Phone, Stop Etc.. OK		
Maintenance Contract Verified		
9. PACKAGE UNITS	STATUS	LOCATION, NOTES, ETC.
.01 General	<del>XXXX</del>	
No Unusual Noise, Vibration	N/A	
Cleanliness, Gen. Appear. Good	↓	
Piping, Valves Free Leaks		
Motor, Belt Drive Adjusted. Lubed		
Belt Guards Adequate, Secure		
Coils Clean, Unobstructed		
Filters Clean, Changed Regularly		
Thermometers, Gauges, OK		
No Oil Leaks		
Operating Pressures OK		
Sight Glass Free Bubbles		
Compressor Operation OK		
Condensate Pans/Drain Clear	↓	
10. MAINT. SCHEDULES, RECORDS	STATUS	
.01 Drawings, Instruct., BSP's	<del>XXXX</del>	
Up-To-Date Prints Available	OK	
Operating Instructions Avail.	✓	NEED MANUAL FOR AIR COND. COMPRESSOR
BSP's Available	OK	
.02 Maint. Schedules, Logs	<del>XXXX</del>	
Equipment Inventory Avail.	OK	
Refrig., Vent, Boiler Logs OK	OK	
All Repairs Recorded	OK	
Formal Preventive Mtce., Used	OK	
Preventive Mtc. Records Avail.	OK	

NOTES: