

**USDA ENERGY AUDIT PROGRAM**  
**WEST VIRGINIA UNIVERSITY**

**PLANT BACKGROUND INFORMATION**

Assessment Number            

Assessment Date    /    /   

Plant Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Principal Product: \_\_\_\_\_

Working Hours:

1. Office      From      A.M. to      P.M.

Number of days per week: \_\_\_\_\_

Number of weeks per year: \_\_\_\_\_

2. Production Area:

Number of hours per day: \_\_\_\_\_

Number of days per week: \_\_\_\_\_

Number of weeks per year: \_\_\_\_\_

Note down any special shutdowns, overtimes, different operating hours in different areas of the plant. This information will affect the operating time calculations: \_\_\_\_\_

\_\_\_\_\_

Plant and Office Area: \_\_\_\_\_ ft<sup>2</sup>

Labor rate for in-house maintenance including fringe benefits: \$ \_\_\_\_\_ per hour

Annual energy usage: \_\_\_\_\_ kWh electricity; \_\_\_\_\_ MMBtu of natural gas;  
Other (please list):

What is the annual energy cost? \$ \_\_\_\_\_ electricity; \$ \_\_\_\_\_ natural gas;  
Other (please list):

What is the unit cost: \$ \_\_\_\_\_ per kWh; \$ \_\_\_\_\_ per MMBtu (or MCF)

Are the Energy Bills available?

If the plant works for more than one shift, are there any operations that can be moved from 1<sup>st</sup> shift to 2<sup>nd</sup> or 3<sup>rd</sup> shifts? \_\_\_\_\_

If yes: Equipment's that are used for the above operation with their details

Equipment	Size	Quantity

**Building Construction:**

Wall Material: \_\_\_\_\_

Insulation on wall: YES/NO

If 'YES', name of insulation material: \_\_\_\_\_

Insulation thickness: \_\_\_\_\_

Roof material: \_\_\_\_\_

Insulation on roof: YES/NO

If 'YES', name of insulation material: \_\_\_\_\_

Insulation thickness: \_\_\_\_\_

Are there any dock doors in the plant: \_\_\_\_\_

P.S.: Dock Doors are the doors used for the entry of the trucks into the building to load/unload material.



Example of dock door

If there are dock doors:

Size of Dock Doors (Length x Width)	Quantity

Is there any insulation on the dock doors? \_\_\_\_\_

If yes: Type of insulation on the dock doors: \_\_\_\_\_ Thickness: \_\_\_\_\_

Are there any openings like cracks or gaps (near dock doors etc.,) which allow air into the building other than regular doors/windows? \_\_\_\_\_



Example of gap under the dock door

If there are gaps:

Size of the gap (Length x Width)	Quantity

**Heating and Air Conditioning:**

**Office and Plant**

Name / Type

Number of Units

Capacity/Size  
(From Name Plate)

Office Cooling: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Plant Cooling: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Office Heating: \_\_\_\_\_  
 \_\_\_\_\_

Plant Heating: \_\_\_\_\_  
 \_\_\_\_\_

Do the HVAC units operate during nights and weekends where there is no occupancy? \_\_\_\_\_

P.S.- HVAC stands for 'Heating Ventilation and Air Conditioning'

If yes: Are there any temperature setback controls on HVAC units? \_\_\_\_\_

Heating Setback Temperature: \_\_\_\_\_

Cooling Setback Temperature: \_\_\_\_\_

P.S.:

**Setback Temperature:** An automatically timed setting of a thermostat to a lower (setback) temperature as in the buildings during nights and weekends.

Are there any economizers on Air Conditioning units? \_\_\_\_\_

P.S.:

**Economizer:** The function of the economizer is to bring in cool outside air to satisfy the cooling needs of the building when the temperature of the outside air is cooler than inside air. This helps to reduce the energy consumption of A/C units.

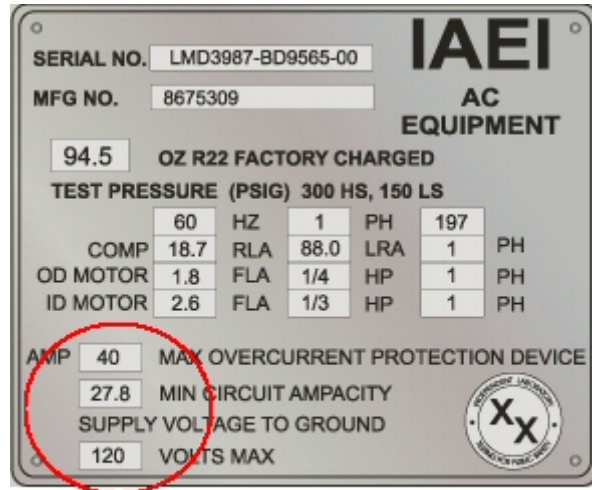


Example of Economizer

Air Conditioning Units Details:

Name / Type	Manufacturer Details (From Name Plate)	Cooling capacity (ton)	Cooling capacity (kW)	Quantity	CFM/unit	COP (From Mfg Catalog)
	Model No: Serial No:					
	Model No: Serial No:					
	Model No: Serial No:					

	Model No: Serial No:					
	Model No: Serial No:					
	Model No: Serial No:					
	Model No: Serial No:					
	Model No: Serial No:					



Example of Name Plate of A/C Unit

## Nameplate

### Air compressors:

Type of Compressor (See Mfg Catalog)*	Manufacturer Details (From Name Plate)	Quantity	Rating of Compressors (From Name Plate)	Max Rated Pressure/ Operating Pressure (From Name Plate)	Operating Hours
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				

\* There are different types of compressors like, - rotary screw, reciprocating, centrifugal etc.,

Where is compressor located:                      Inside the building / Outside the building \_\_\_\_\_

If the compressor is located inside the building then,  
How far is the compressor from the nearest outside access in feet? \_\_\_\_\_

Approximate temperature of the air near the compressor:                      \_\_\_\_\_ °F



Is the Air –Fuel Ratio monitored in the boiler? \_\_\_\_\_

If yes: Oxygen % \_\_\_\_\_

Is condensate returned to the boiler: \_\_\_\_\_

P.S.: Condensate is the used steam from a process in the form of steam and water mixture or hot water

If condensate is returned to the boiler: How much \_\_\_\_\_%

If condensate is not returned to the boiler: How much can be returned \_\_\_\_\_%

**Furnaces:**

<b>Furnace Fuel Type</b>	<b>No. of Furnaces</b>	<b>Rating</b> (MMBtu/hr or kW)	<b>Combustion Air Temp</b> (°F)	<b>Stack Temp</b> (°F)	<b>Operating Hours</b>

Is the Air –Fuel Ratio monitored in the furnace? \_\_\_\_\_

If yes: Oxygen % \_\_\_\_\_

**Chillers/Cooling Towers:**

<b>Name/Unit Type</b>	<b>Manufacturer Details</b>	<b>Number of Units</b>	<b>Capacity / Size</b>	<b>Set Point Temp.</b>	<b>Operating Hours</b>
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				
	Model No: Serial No:				

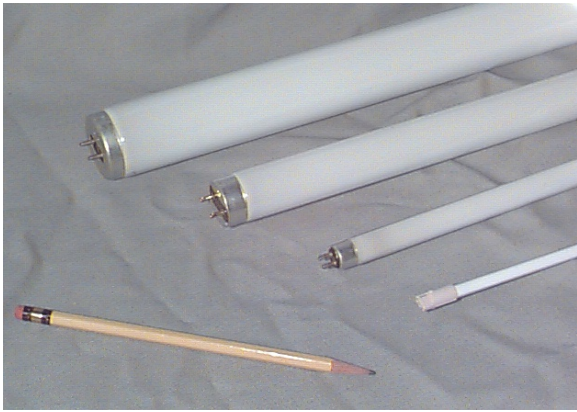
Does Chillers or A/C units use Anti-friction-additives in lubricants? \_\_\_\_\_

P.S.:

**Anti-friction-additives:** It is an additive added to lubricant of the chillers to reduce friction and energy consumption.







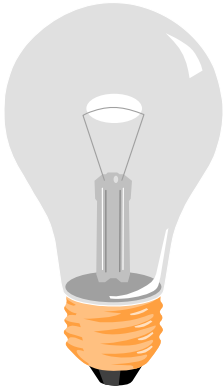
Example of Fluorescent Bulbs  
From top to bottom:  
T12 (1.5" diameter)  
T8 (1" diameter)  
T5 (5/8" diameter)

Are there any lights turned on outside the building during day time? \_\_\_\_\_

If yes: Location \_\_\_\_\_ Type \_\_\_\_\_ Quantity \_\_\_\_\_ Wattage \_\_\_\_\_

P.S.:

**Different types of Bulbs:.**



INCANDESCENT BULB



COMPACT FLUORESCENT LAMP



HIGH PRESSURE  
SODIUM VAPOUR



HIGH PRESSURE  
MERCURY VAPOUR



METAL HALIDE LAMP

