**MSU-IAC**

Pre-Assessment Questionnaire

Company Name:

SIC/NAICS Code:

Address:

Phone:

Contacts:

Number of employees:

**Products Produced:**

**Raw Materials:**

Name: Annual Quantity:

**Plant Operations:** Please include information on hours of operation as indicated below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Shift** | **Shift Start** | **Shift End** | **Hours per shift** | **# of employees** | **Days per year** | **Weeks per year** |
| Shift 1 |  |  |  |  |  |  |
| Shift 2 |  |  |  |  |  |  |
| Shift 3 |  |  |  |  |  |  |
| Office |  |  |  |  |  |  |

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

Annual Sales: $ million

Plant and Office Area: ft2

***Please provide a drawing or sketch of your plant layout indicating major processes and equipment etc. to IAC director.***

**Energy Bills:**

***Please provide electricity and natural gas bills for the last 12 months to IAC director to help us develop an understanding of your typical yearly electricity consumption and its’ variation with season.***

**Electricity Consumption:**

Power company: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of meters: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Approximate annual cost: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are you aware of any power factor issues? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Additional information: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fossil Fuel Consumption:**

Supplier(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Types of fuels used (e.g., natural gas, propane, fuel oil, other): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Volume of fuel used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cost of fuel: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are fossil fuels used in your process(es)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Processes in which fossil fuels are used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Main Energy Consuming Equipment:**

Please provide information on the equipment and processes which are responsible for consuming the major portions of energy in your plant.

Office cooling: (Tonnage, when and where used, temperature of cooled areas)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Plant cooling: (Tonnage, when and where used, temperature of cooled areas)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Office heating: (Tonnage, when and where used, temperature of heated areas)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Plant Heating: (Tonnage, when and where used, temperature of heated areas)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Heating Setback Temperature: °F

Cooling Setback Temperature: °F

Boilers: (Size, fuel, steam or hot water, service factor - time and application of use)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Furnaces/Ovens: (KW or BTU, application, service factor)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |

Air Compressors: (Size and number, HP, type, pressure, service factor, synthetic or hydrocarbon lubricants)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Chiller/Refrigerators/Cooling Towers: (KW, tonnage, coolant temperature, service

factor etc.)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Pumps: (Size and number, HP, type, pressure)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |

Large Motor Drives (HP, VFD), where used:

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Any other energy intensive equipment: (#, function, type, Btu or KW, average load)

|  |  |  |  |
| --- | --- | --- | --- |
| Name / category / type | Capacity/Size | # of units | Additional information |
|  |  |  |  |
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**Brief Description of Manufacturing Process:**

In order to develop a good understanding of your process(es) and operations, and thus be able to better accomplish our task of developing suggestions for your consideration, it would be helpful to review a schematic or flow chart of the processes from raw material receipt through product manufacture and final product packaging and shipping. If you have drawings of your processes which will help us accomplish this task, please attach them to these forms; or if unavailable please sketch them below and on any attached sheets that might be necessary.

**Waste Generation Information (specifically waste oil and lubricants):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Waste Material** | **Source** | **Pounds per year** | **Current Disposal or Treatment Methods** | **Costs** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Water Consumption and Treatment:**

Water sources, volumes, and costs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is water treated in-house? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is water recycled in-house? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe in-house water treatment facilities, if any (filtration, RO, pH, flow rates etc.): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sewage volume and associated costs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Final considerations:**

Are you interested in receiving an additional assessment at your plant in any of the following areas? Please select the topic(s) you are interested in.

Cybersecurity Smart Manufacturing \*Prognostic and Health Management

Waste Management and Conversion

Safety Needs/Issues/PPI etc. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are there any particular problems areas with respect to pollution prevention, waste products, or energy consumption that you would like the team to pay special attention to? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Additional Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

May we take photographs in your plant? (circle one) YES NO Some Areas

\*Prognostic Health Management (PHM) is a maintenance policy aimed at predicting the failure occurrence in components and consequently minimizing unexpected downtimes of systems.