



International Council for Machinery Lubrication  
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# 2008 Augustus H. Gill Award Application Form Entry Deadline December 31, 2008\*

\*ICML reserves the right to extend and/or change the deadline or any other aspect of the award process without prior notification.

**Please Print or Type – All questions MUST be answered in order for application to be considered, use N/A (non-applicable) if needed**  
 - \*ICML reserves the right to send an audit team to your site

General Information					
Your Name			Title		
Phone Number (     )		Business Fax (     )		E-mail Address	
Company Name			Plant Name Specific to this application		
Street Address (No P.O. Boxes)		City	State	ZIP	Country
Mailing Address		City	State	ZIP	Country
Type of Industry		No. of employees at plant	Plant age	No. of shifts/day	Days per week
Plant Maintenance Information					
Total # of maintenance personnel. Total # of people working in predictive technologies		Total # of people involved in oil analysis related-task (full-time equivalent). How many certified?		Estimate total pieces of plant equipment	
Estimate the % of maintenance practices performed in plant (total to 100%):					
2007: Run-to-failure:    % Preventive:    % Predictive:    % Proactive:    %					
2006: Run-to-failure:    % Preventive:    % Predictive:    % Proactive:    %					
Plant Resources/Culture/Work Processes					
Is a Computerized Maintenance Management System (CMMS) consistently used to manage assets? <input type="checkbox"/> Yes <input type="checkbox"/> No			Do you track CBM (Condition-Based Maintenance) cost/savings? <input type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, do you track it by CBM technology? <input type="checkbox"/> Yes <input type="checkbox"/> No			Do you reward resources for receiving certifications or good job performance? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Identify the CBM reporting structure <input type="checkbox"/> A separate department inside plant <input type="checkbox"/> Reports to production/operations <input type="checkbox"/> Direct cost center/report to management <input type="checkbox"/> Reports to integrated CBM/Reliability			Have you implemented any of the following? <input type="checkbox"/> TPM (Total Productive Maintenance) <input type="checkbox"/> TQM (Total Quality Maintenance) <input type="checkbox"/> RCM (Reliability Centered Maintenance) <input type="checkbox"/> JIT (Just in Time) <input type="checkbox"/> ISO 9000 <input type="checkbox"/> Work teams <input type="checkbox"/> Operator-based maintenance <input type="checkbox"/> Six-sigma <input type="checkbox"/> Lean		
Check the CBM Technologies used in your plant:					
Vibration <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Oil Analysis <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Motor <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Infrared Thermography <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Ultrasonics <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Alignment/Balancing <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Other <input type="checkbox"/> in house certified, <input type="checkbox"/> in house not-certified <input type="checkbox"/> outsourced, <input type="checkbox"/> not used					
Does your CBM reporting include			Do you operate an in-house lab?		
Integrated technology reports <input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Full Lab		
Cost analysis reports <input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Screening Lab		
Performance indicators <input type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> None		
Do you rank critical equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No					

## Oil Sampling Practices

Which of the following best describes the location from which samples are drawn from the machine?

- We have specifically located locations identified that are tied to our lubrication management objectives. Some machines have several sampling locations to accommodate changing objectives. Each location is uniquely identified and clearly marked.
- We regularly draw samples, but we usually just get the oil from the place where it is easiest.
- We rarely, if ever, draw samples for performing oil analysis.

Which of the following best describes the sampling hardware used:

- Where applicable, we have installed valves and hardware that enable us to draw a representative sample in from the same place and in the same way each time without shutting down the system or putting it at risk.
- Some systems have valves installed. They are generally installed in the most convenient location. The quality of the sample was not really considered during installation.
- The only valves installed came with the machine. On the rare occasions that we sample a system, we generally just pull it from the sump or reservoir. Often, this can only be accomplished when the machine is shut down.

Which of the following best describes the manner in which your sample bottles are managed?

- Our sample bottles have been certified to a specific and known cleanliness levels. Upon arrival, they are stored in a protected environment to ensure that they remain clean. We use a first-in first-out inventory management system to keep bottles new and fresh.
- We believe our bottles to be clean, but we have not data from the supplier. We generally store the bottles inside the office where they are protected.
- We really don't know anything about our sample bottles. Sometimes, they are stored in dusty or dirty areas. One might find the caps loose or off of the bottle. They may be around for a good while because we don't sample that often, if at all.

Which of the following best describes your sampling procedures?

- We very specific, written procedures for each method of sampling used and for each machine and sampling location. These procedures identify material requirements, the procedure itself, and safety suggestions. Schematics are used to illustrate the process. The procedures are widely available (on paper or on the intranet) and are regularly used. They are occasionally reviewed and revised as required.
- We try to follow general guidelines to ensure quality, but are results are a little sketchy. The procedures are not written, or they are not widely available. We aren't certain they are carried out in a consistent manner.
- We really don't follow any procedures when drawing samples for oil analysis.

## Proactive Oil Analysis Practices

Which of the following best describes your new oil analysis program?

- We randomly analyze new oil as it arrives from the supplier, during storage and upon delivery to the machine. We regularly update baselines understanding that lubricant properties, especially additive levels, can vary from shipment to shipment.
- We rarely analyze new oil, unless we suspect it in relation to a problem we are trying to solve. We have baseline data, but it is rarely updated.
- We don't maintain any new oil data.

What happens when an over-limit contamination condition is detected?

- An investigation to identify the root cause for its ingress is undertaken.
- The oil is changed.
- These conditions are not routinely monitored or addressed.

Which of the following describes your contamination exclusion practices?

- Regular walk-down inspections include a visual confirmation that sumps and reservoirs are properly sealed, inspection of lube levels and temperatures, inspection of easy to view bottom sediment & water (BS&W) bowls, and a sensory inspection of the lube's color, clarity and odor. The information is collected and managed on charts or in a computer program.
- Regular walk-downs include only a general look at the machine and lube level and condition through a bulls-eye or other viewing device. Unusual occurrences are reported.
- Walk-downs are only periodic or occasional. Low lube levels, when encountered, are corrected, but not regularly reported. Little attention is given to the look or smell of the lubricant.

Which of the following best describes your lube additive management program?

- Additive levels are measured using a combination of oil analysis tests, including FTIR Spectroscopy, TAN/TBN, Elemental Spectroscopy, RBOT, etc., when the remaining useful life of an oil drops below limit, the situation is assessed to determine if it is abnormal. If abnormal, the root cause is identified and corrected. The oil is reconstituted or changed depending upon the economics.
- Oil analysis is used to detect the point at which additives fail and base-stock degradation is begins. At that point, the oil is changed before component damage occurs. Little is done to trend remaining useful life of the oil or to determine if the depletion was normal or abnormal.
- Additive levels and remaining useful life of the lube are not routinely monitored using oil analysis.

## Predictive Oil Analysis Practices

Which of the following best describes the manner in which wear particles are detected in your oil analysis program?

- We employ a combination of particle counting (ISO Codes), elemental spectroscopy (individual metals in parts per million) and wear density (Wear Particle Concentration, percent ferrous, micrograms per ml, wear index, etc.) to ensure that we see large and small particles. We recognize that a combination of tests is required to see the entire picture.
- Our reports show us metals in parts per million. We trend these numbers to signal a problem.
- We really don't trend wear metals with oil analysis.

Which of the following best describes your alarming techniques for detecting abnormal wear debris?

- We use a combination of rate-of-change and statistical alarms to signal problems. We have set our caution and critical alarms after careful consideration of the machine, its application, the operating environment and our mission objectives.
- We primarily rely upon our oil analysis lab to identify alarm conditions.
- We really don't have a program to identify alarms, or we don't use oil analysis to detect abnormal wear.

Which of the following best describes your relationship with the analyst who performs microscopic wear debris analysis?

- We recognize that microscopic wear debris analysis is highly subjective. We communicate important information (temperatures, running conditions, vibration data, hours, etc.) about the situation under analysis to the analyst for consideration. We feel confident that our analyst understands both oil analysis and machinery engineering. He also understands our industry and application.
- We know little about the analyst. We assume that he/she is capable and understands our machine and application. We don't feed the analyst information about the situations when the sample is submitted.
- We don't really use wear debris analysis to solve equipment problems.

Which of the following best describes the relationship between oil analysis functions and other condition monitoring functions within your organization?

- Oil analysis, vibration analysis, thermography, and other condition monitoring specialists are a part of the same team with a common leader or manager. This "reliability" team functions together. The team may have technology specialization, but communication is clear between members. We recognize that it takes a whole set of tools to get the job done. We share data, and try to maintain all data on a common database.
- The condition monitoring specialties generally work independent of one another. When required, cooperation occurs informally via the "sneaker-net", but this can be unreliable.
- We don't combine condition-monitoring activities. In fact, there may be mistrust or a lack of respect between the technology functions. They rarely, if ever, collaborate to solve problems.

## Essay

For the remainder of this application, in essay format, please keep in mind the criteria for the Gill Award listed below and make sure to cover each one, addressing the improvements (prepared for or actually implemented) in each category, with demonstration of such improvements and when possible, specifics on the approach, examples of activities, results, and continued improvements. **It is important not to leave anything out** - the ideal candidate will be able to demonstrate, among other things, a solid program backed-up by a multi-disciplinary effort and approaches with sustainable results and continued improvements.

- Commitment to Education
- Maintenance Culture and Management Support
- Performance Measurements
- Proactive / Predictive Maintenance
- Standardized Procedures
- Integration of Condition Monitoring
- Contamination Control
- Lubricant Management
- Lube Analysis Strategies
- Use of Information Technology
- Plan for Continuous Improvement

If acronyms are used, please include a glossary. The addition of photos is encouraged. **Remember - information left out can not be considered, so please be thorough** in describing your program and covering the following items, **QUESTION POINT BY QUESTION POINT - please answer each point thoroughly:**

### **Process of moving towards a world-class oil analysis program**

Describe the process by which changes to your oil analysis and CBM program were implemented.

What was the strategy that you implemented? Changes to filtration? Changes to Lubrication? Changes to oil analysis? Other areas of change? Proactive maintenance? Predictive maintenance?

Which machines did you target for change? Why did you choose these machines?

Describe unforeseen hurdles or obstacles in the process. Were there any surprises?

How long did it take you to implement the program/changes?

Describe how the proposed plan was justified (economic, safety, environment, etc.) and sold to management (if applicable).

What/who guided you in the changes and improvements? How did you know what to do?

Describe how oil analysis fits within your reliability/CBM culture

Explain how CBM fits into company goals

Are the CBM technologies used integrated and if so, how?

Describe how the CBM information is utilized

### **Specific changes made to move towards a world-class oil analysis program**

Describe what oil analysis related training your staff routinely receives. To what extent has your plant/mill provided training to key people? Has this been a good investment? Was this training done in-house or elsewhere?

Are lubrication and oil analysis integrated with other maintenance technologies? How does oil and vibration/thermography work together? Is there anyone trained in multiple technologies?

What measures are in place to control contamination ingress?

What types of hardware are installed on equipment to aid in inspection, sampling and contamination control?

Please describe your oil sampling procedures. How and where are samples taken from equipment? What alarms and limits are set? How often is equipment sampled?

Please describe the overall effectiveness of your preventive, predictive and proactive program.

What role has your lubricant supplier played? Filter supplier? Equipment supplier?

**Benefits of a world-class oil analysis program**

What benefits were realized? Reduction in lubricant consumption? Lower repair costs? Reduced production losses? Extended mean-time between failures? Reduced filtration costs? Reduced deposal costs? More "saves" and fewer "misses"? Planned maintenance versus reactive maintenance?

How did you gauge or monitor your program's progress? Please quantify savings or benefits monetarily if possible.

What was the role of contamination control in achieving your savings or benefits? How contaminated were your oils previously? What target cleanliness/dryness levels did you achieve? What did you do to restrict the ingress of contamination to your fluids: breathers, seals, transfer filters, etc.?

How has oil analysis been successful in alerting you to machine faults or abnormal wear conditions? Describe any specific "saves" you achieved using oil analysis. Do you set your own oil analysis limits? Do you use a certain type of software? Do you perform oil analysis onsite and if so what tests? Describe your laboratory services and their role in the savings/benefits achieved.

What was the reaction of the implementation team? Tell us about the people involved with your program. Who does what? What special skills were involved?

What was the reaction of those affected by the program change?

What was the reaction of management to the program change?

What would you have done differently if you could start over again? What techniques or strategies would you recommend to others?

What are the plans for continuous improvement?

Will the program be expanded to other applications, machines or plants?

I hereby authorize our plant's participation in the 2008 Augustus H. Gill Award. I agree that, to the best of my knowledge, the above information is correct. All information provided will be held strictly confidential.

Plant Manager (please print) \_\_\_\_\_ Signature/Date

Maintenance Manager (please print) \_\_\_\_\_ Signature/Date