DIS RESEARCH COMMITTEE MEETING
February 4, 2009
Stork Climax Research Services, Inc., Wixom, MI

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1. Member Introductions - 21

   Meeting started at 9:00 am.

2. Previous Meeting Minutes - Approved September 15, 2008

3. Voting body membership changes - Remove Chris Bixler of Applied Process. Add Matt Meyer of Bremen Castings as Foundry Member. Add Carlos Leon of Navistar - Waukesha Div. as Foundry Member and Walt Wan of Betz Foundry as Foundry Member. Walt Wan will also be added to the Research Committee roster.

4. Subcommittee Membership changes - Carlos Leon of Navistar - Waukesha Div. has agreed to serve as the Vice-Chairman of the Properties Subcommittee.

5. Completed Projects comments & questions - Project #42 is complete and posted on the DIS website. There was more discussion on the scope of the original project proposal and it was met with this report. The money has been spent on the project. There was more extensive discussion on whether there should be a Phase 2 on this project. This would require another proposal as Grede has many samples to be analyzed. It must be understood that if this goes ahead, there is no confidential information held back. Grede, Prem Mohla, Rick Gundlach and the committee need to discuss this further. Matt Meyer will help as a resource.

6. Ongoing projects

   a) Process Subcommittee (Jim Csonka)

   - Image Analysis proposal for Nodularity to ASTM - Handed out the latest proposal from Gabe Lucas (E4.14 Subcommittee Chair)

   - Ductile Iron Cover Material - Jim Csonka handed out a summary of the survey that we received back from 14 foundries. The group felt that the information was worthwhile to continue. Jim Wood will send out the survey again to the balance of foundries that didn-t respond.

   - Graphite Shape Degradation at the Surface of Chemically Bonded Sand Molds and Cores - This project which was introduced by Al Alagarsamy was approved by the RC Voting Body and will now go to the Board of Directors in June 2009 for funding approval. This will be Project # 45, at an estimated cost of $6000.

   - Optimizing Mg Treatment with a Master Alloy - Scott Gledhill

     Since nothing has happened with this project in some time, the RC recommended it be moved to the Parking Lot for now.

b) Properties Subcommittee (Scott Gledhill)

- Project #43 - Dimensional Growth of Ductile Iron Castings during Heat Treatment

  Rick Gundlach presented the initial report to the Research Committee. Rick will be forwarding the final draft by March.

- Project #44 - Effect of Surface Defects on Fatigue Properties of Ferritic Ductile Iron

  Rick will continue the testing of the samples sent to Climax by Hodge Foundry. Testing should be completed by September 2009. There are 5 phases of testing which is being done on the GGG 40.3 material. There was a monitoring committee established and those volunteers are Walt Wan, Prem Mohla, Doug White and Don Craig.

- Influences of Grain Refinement on Ferritic Ductile Iron - Gundlach & Subcommittee

  Rick made a presentation summary to the group on his proposal. The overall projected cost on this project is $155,000. The AFS is also involved and are looking for matching funds. The group felt that the DIS could offer $47,000 over 2 years if approved by the Board of Directors. The major problem would be that the DIS would be a partner of a consortium, and who would own the rights to the publication when completed. John will present this project to the Board of Directors for funding at the June 2009 DIS Annual Meeting.

c) Applications Subcommittee (Gene Muratore)

  Gene reported that he is unable to attend the SAE Commercial Show in Detroit, MI in April 2009. In his place Tim Dorn of Applied Process has volunteered to attend the show and represent the DIS.

7. New Ideas for Projects

- Managing Tramp Elements - Matt Meyer

  Matt has recommended that this project be moved to the Parking Lot for now. The Research Committee agreed.

- Gating System Effect on Surface Quality of Ductile Iron Castings - Preston Scarber, Jr.

  This project proposal will cost $50,000 over 2 years. The first phase will be $32,000 for 12 months and the second phase would be $18,000 over 9 months. The Research Committee was not interested as the proposal was written. The group didn-t feel that more research needs to be done on gating systems.

- Machinability Ratings for Ductile Iron - Michael Finn, Finn Metalworking and Cutting Solutions

  The Research Committee felt that they would like to see the results from a project that is currently being worked on in Gray Iron by Michael. The group could then make a

better decision on whether Ductile iron should be studied. This project is estimated to be $56,000 to $66,000.

- Optimizing the Machining of Ductile Cast Iron - Michael Finn, Finn Metalworking and Cutting Solutions

  The Research Committee felt that there is more discussion required on this proposal. The group felt that Michael should attend the next Research Meeting to offer more explanation and answer questions. The cost of this proposal is estimated to be $35,000 to $45,000.

- Resulfurization as a Method for Controlling the Microstructure and Improving the Machinability of Compacted Graphite Irons - Schwam & Poerschke, Case Western Reserve University

  This proposal is estimated to cost $5000. The Group felt that this project which covers the use of sulfur only could be enhanced if small amounts of titanium were added. Jim Wood will get in touch with CWRU and see if this project is viable since David is graduating in May 2009.

- Prediction of Ferrite-Pearlite Ratios in Ductile Iron - Viswanathan, UAB

  This project is estimated to cost $48,500 over 12 months. Jim Wood and John McGoldrick are to write back to Srinath with what tramps elements we are interested in him using in his study.

- Development of High Modulus Cast Iron - Alan Druschitz, UAB

  This project is estimated to cost $27,792 over 12 months. The Research Committee felt that this project would only help the Crankshaft manufacturers and really no other foundries. Since this only represents a small amount of our members and not the whole, this project was turned down for now.

- Feeding Nature of High Silicon Iron (SiMo) - Al Alagarsamy (no proposal)

  The Research Committee made a decision to move this to the Parking Lot for now. There are currently enough projects to review.

8. Hot Topics

- Energy Conservation - A. Adams
  Andy is still working on this hot topic.

- Microstructure & Machinability - M. Gagne
  Martin is 90% complete.

- Test Bars - Types - E. Timmons
  Ernie was absent.

- Analysis of Tensile Fractures in Test Bars and Castings - Gundlach

- Welding of Ductile Cast Iron - Rob Logan - Completed in March 2009

- Why do we get more Ferrite at Some Times and Not Others? - Bob Bigge

9. Training (Project #41)
   - Casting Defects?

10. Parking Lot

    Projects
    - Low Temperature Properties of DI - Gagne

    Hot Topics
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11. New Business

    -Heavy Section - Windmill Technology- T&O Meeting/Conference, Fall 2010

    A committee of Jim Wood, Prem Mohla and John McGoldrick has been established to organize this special T&O meeting for the Fall 2010 in Cleveland, Ohio. This will be an extra day long due to the subject matter. If there are any other members who wish to be on this committee, please contact any of the other three members.

12. Next Meeting, Date, & Time

    The next Research Committee Meeting will be held during the Spring DIS Annual Meeting on June 3, 2009 at the Eden Resort Inn & Suites in Lancaster, PA. The meeting will begin at 8 am on June 3rd in the Regency II Room.

Respectfully Submitted,

John McGoldrick
DIS Research Committee Chairman
Hodge Foundry

James N. Wood
Executive/Technical Director
Ductile Iron Society

March 18, 2009