



Billings Refinery

December 8, 2015

Dear Council Member:

Please find attached a copy of the minutes from our **November 10, 2015** CAC meeting. Just a reminder that the next CAC meeting will be **TUESDAY, DECEMBER 8, 2015** at the Petroleum Club in the Crowne Plaza Hotel as we celebrate the 25th anniversary of the CAC. The meeting will run from 5:00 to 7:30 p.m. Dinner will be served from 5:00 to 6:00 p.m.

Sincerely,

Ann L. Clancy, Ph.D.
Meeting Facilitator

**Meeting Location: Petroleum Club
Crowne Plaza Hotel**

**PHILLIPS 66 BILLINGS REFINERY
CITIZENS ADVISORY COUNCIL
November 10, 2015**

MEETING MINUTES

Present: Council members: Keith Beartusk, Lucas Blehm, Bob Carr, Paul Dextras, Ralph Hanser, Travis Harris, Bob Hoar, Shirley McDermott, Eileen Morris, Gregory Neill, John Pulasky, Melanie Schwarz, Andrew Sullivan, Michelle Zahn, Phillips 66 management: Colin Franks, Mark Cohn
Facilitator: Ann Clancy

Absent: Mark Hilbert, Lance Johnson, Bruce MacIntyre, Melissa Patton, Katey Plymesser, Ray Rigdon, Jim Ronquillo, Emily Shaffer, Mike Yakawich, Stella Ziegler

Guests: College of Technology students

AGENDA

- Welcome/Introductions
- Refinery Update
 - Introduction of Steve Torpey, Air Environmental
 - 2017 Turnaround & Vacuum Improvement Project
 - Refinery Environmental Issues
 - Refinery Safety Issues
- Preparation for 25th CAC Anniversary Celebration
- Debrief of 2015 Meet in Park Event
- Next CAC Meeting: December 8

WELCOME/INTRODUCTIONS

Mike Baker, Maintenance Manager, opened the CAC meeting apologizing that Ray Rigdon and Colin Franks would not be able to attend and stating that he would be hosting the CAC meeting in their stead. He introduced Steve Torpey, Air Environmental, who has replaced Randall Richert in this position as of summer 2015. He introduced the other P66 speakers for the evening: Mark Cohn, Environmental Director; and Justin Meacham, Safety Team Lead. He said the focus of the meeting would be to talk about exciting events planned for the refinery over the next year and a half. One of the events is the whole plant turnaround set for spring of 2017. Much of the focus of 2016 will be on preparing for this 2017 event and for the start up of the Vacuum Improvement Project, the largest such venture currently in progress in the entire company.

The following Power Plant Process Technology students attended the meeting: Austin Pickering (2nd year) and Dayton Willoughby (1st year).

REFINERY UPDATE

Billings Refinery 2017 Turnaround

Mike Baker, Maintenance Manager, described the 2017 total plant turnaround which will be the largest one the refinery has ever seen. It will take place around mid to late April of 2017. Every

five years, the entire refinery goes through a turnaround to guarantee the plant's mechanical integrity through inspections and tests. Different sections of the refinery are opened up, cleaned and inspected using advanced technology to measure metal thickness and test for cracks. This is also a time when worn out equipment is replaced. It is an expensive event for the refinery in terms of costs and hours of time. During this event there are also projects to improve safety and environmental integrity. The turnaround will take place over a 56 day period during which different portions of the plant will be addressed in a sequential manner. At the peak of the turnaround, the refinery expects to have 1100 contractors on site with 900 as the average number of workers. There will be craft and skills people from Texas, Oklahoma, and the mid-west staying in Billings's hotels and campgrounds.

Mike noted that this large of a turnaround requires a lot of planning to set up and finalize the scope of work and to select contractors to work on more than 3000 equipment items. He is responsible for the planning and facilitation of the mechanical and safety aspects of the turnaround which will take most of 2016 for him to plan.

The following CAC member questions and comments were recorded:

- *What corporate support do you get for the turnaround?* Corporate provides a lot of support during the planning stage by offering audits, contingency plans and corporate oversight. During the execution phase, there will be 15-20 corporate folks helping. Such a turnaround gets a lot of corporate attention because the plant is not producing for 56 days. On December 15, there will be a preliminary review with the President of Refining.
- *What do regular employees do during the 56 days of the turnaround?* The maintenance workers are in charge of the contractors and the engineers are in charge of the shutdown. Employees will be overseeing and managing the project during 13-hour days. The company also has a fatigue policy in place during the turnaround.
- *How much does it cost per day to execute the turnaround?* It is a \$300 million project which represents loss revenue per day of about a million dollars. Billings is the smallest of the 13 Phillips 66 refineries with only 61,000 barrels per day production.
- *What is the company strategy moving forward?* Billings is considered a healthy market and this refinery is consistently profitable with its ready access to low cost Canadian crude oil. Because the crude oil is of lower quality it is more corrosive on the equipment so during the turnaround the refinery will be focused on upgrading all the metallurgy of the units.
- *What steps do you take to minimize the impact of the shutdown on your customers?* We have marketing people already working on this who are buying products from other sources.
- *What risks are there to the city during this turnaround in terms of flammable and combustible materials?* There is risk during the shutdown and start up processes of the turnaround. The startup phase has more risk as equipment is brought back on line. The refinery is at its highest alert and the process operators are well supported by the operations people. There are many detailed procedures that are followed.
- *Is there anything that the Billings Fire Department needs to be aware of during this process?* The refinery goes through this every five years so there are protocols in place. For starting up new equipment, we bring in dedicated workers and we'll be planning this over the next 2 years. We already have equipment coming in, one of which is so large it is being fabricated on site.
- *How will the Vacuum Improvement Project impact this turnaround?* The refinery already has an existing vacuum unit but it is too small so it will be replaced and enlarged.

- *Does weather plan a factor in the timing of the turnaround?* Yes, it does. We bring in lots of skilled craftsmen from the Gulf Coast so it is a risk for us if we get snow or cold during the shutdown. It slows us down and impacts on our skilled contractors.

Billings Refinery Vacuum Improvements Project

Mike Baker presented slides showing how the improvements project will maximize the advantaged crude production at the refinery. The scope and objectives of the project are to:

- Enable 100% heavy advantaged crude slate (18 MBPD)
- Upgrade metallurgy to facilitate higher total acid number (TAN) crudes (23 MBPD)
- Increase refinery clean product yield by 2 MBPD
- Eliminate mid-cycle crude & vacuum heater decokes
- Implement during 2017 turnaround window

The larger and improved vacuum tower will allow for more fractionation/separation leading to less waste and more refined gasoline and diesel fuel. The new equipment is designed to run five years without a shutdown, thus eliminating decoking problems. The strategic drivers for the vacuum improvements project are:

- Anticipated Canadian crude growth
- More values for the advantaged crudes
- An upgrade of alloy metallurgy
- Brand new furnace with increased cut point from 890° to 1050° F
- New exchanges

The planned milestones of the project include:

✓ AFD approval (\$35MM)	Feb-2015
✓ Air permit received	Feb-2015
✓ Order long lead equipment	Mar-2015
✓ Jupiter contract completed	Aug-2015
☐ AFE approval	Aug-2015
☐ Begin construction	Aug-2015
☐ Wastewater permit received	Sep-2015
☐ Crude Unit T/A	May-2017
☐ Start-up	June-2017

The status of the vacuum project is given below:

- FEL 3 engineering complete
- Long lead equipment placed: vacuum tower and associated equipment; heaters H-17 and H-24, exchangers and pumps
- Site preparation completed to support start of civil construction

The contracting strategy includes:

- Engineering, procurement and construction management
 - Engineering: reimbursable to Burns and McDonnell
 - Procurement: equipment competitively bid as representative for P66
 - Construction management: integrated with P66
- Construction
 - Competitive bid: lump sum or fixed fee/reimbursable contracts for civil and underground, ISBL above ground mechanical, OSBL above ground mechanical, I/E
 - T/A: fixed fee/reimbursable integrated with refinery

The following CAC member questions and comments were recorded:

- *Will this upgrade change emissions?* There will be lower emissions for NOX. It will not increase the throughput of the refinery. Production will remain at 62,000.
- *Does the decision about Keystone Pipeline make this project look good now?* Yes. If the pipeline were to be built, it would bring more crude to the Gulf area and it would be more expensive.
- *What will the economic impact be?* The construction phase will bring in workers who will stay at hotels and eat at restaurants and shop. There are also a significant number of local workers who will be employed. It will save about \$5 per barrel in production and contribute around \$140 million to the bottom line. The refinery will have a new skyline by the end of 2016.
- *What is the capacity change?* There is no increase in throughput, just a shift in terms of the optimization effort on the crude oil.
- *What of the other two refineries in this area?* CHS has already upgraded over the past five years but we don't know the extent of that upgrade. We don't know what ExxonMobil has done or might be planning to do.

Refinery Environmental Issues

Mark Cohn, Environmental Director, gave an update on refinery environmental issues regarding compliance with EPA New Source Performance Standards (NSPS). On December 4, 2013, EPA issued direct final amendments to the NSPS for petroleum refineries with a subpart Ja, which included standards of performance related to petroleum refineries. In general, EPA measures NSPS compliance by requiring facilities with stack emissions to conduct initial performance tests that are then to be followed by continuous monitoring. As a result, flares are now considered a separate affected facility and must comply with the short term H₂S limit (3-hour average).

At the Billings refinery, a flare management plan has been instituted to extract more sulfur emissions from the flaring to make it less combustible. The extracted emissions are then sent to Jupiter Sulphur for further processing. The Billings refinery has installed sensitive instrumentation to use for compliance with these new regulations and the monitoring system goes live tomorrow. Mark noted that Phillips 66 views this as an important environmental issue to the community.

Refinery Safety Issues

Justin Meacham, new Safety Team Leader at the refinery, talked about a core value of Phillips 66 to honor a commitment to safety which is integrated into all aspects of the operation of the plant. There is a safety management team whose mission is to send employees home safely every day. The team investigates failures and puts in corrections. The current culture of safety has evolved over the past 30 years to include a health component as well, such as monitoring hazardous chemicals and adding in controls for engineering, administration and personal protective equipment. The refinery has reduced injuries with these efforts. The next major front in pushing safety further into the refinery is to focus on influencing employees' behaviors. Research shows there are individuals who accept higher risk (a "get-it-done" type of mentality) and there are individuals who need help in understanding when conditions change. The next level of safety training in the refinery will emphasize the individual's "self-work authority" meaning workers are empowered to stop a job without fear of consequences if they have a safety concern. The company would rather mitigate any safety concerns before having individuals go back to work. The refinery has also instituted a safety observation program

allowing employees to observe each other's' at-risk behaviors. This is significant as research indicates that employees take their level of safety awareness back to their home environments.

Justin showed a brief video highlighting "inattention blindness" that all humans have in terms of what they see in their familiar environments. People become so inured to what is around them through patterned thinking that they often blocks things out from their environment. Justin concluded with news that the refinery has invested in a fire suppression system, new fire truck, and a foam tender truck to help with emergency preparedness.

The following CAC member question was recorded:

- *How are workers responding to these new safety training measures?* Things are slow to change, especially with the older generation of workers. Other refinery sites have done studies about risk adverse people which we hope will be helpful. The younger generation tends to see more things.

PREPARATIONS FOR 25TH CAC CELEBRATION

Ann Clancy updated members on the preparations for the 25th CAC celebration to take place on December 8 at the Petroleum Club in the Crowne Plaza Hotel. The subteam working on the event includes Bob Carr, Melanie Schwarz, Travis Harris, Colin Franks, Shea Dawson and Ann Clancy.

About 70 past CAC members and guests will be invited. Guests will include city officials, the county commissioners, leadership from MSU-B and Rocky Mountain College, the school district superintendent and the Chamber president. A panel discussion has been set up with the theme of making this a *learning event* by sharing community outreach strategies and efforts amongst the industries represented. Potential speakers would represent the three refineries, Stillwater Mining Company and with the chair of the MSU-B College of Business Advisory Board as moderator. The subteam brainstormed the following questions to ask panel members:

- *Overall:* What would you like to share specifically in terms of your outreach to the community?
- *Safety:* How do you engage the community in your safety preparedness/awareness?
- *Employment:* How do you handle recruiting and retaining employees in the region?
- *Environment:* What are some of your best practices in communicating with the community regarding environmental issues and concerns?
- *Philanthropy:* When you choose an area to engage in, how do you put a long term perspective on that? Looking at corporate vs. local giving, how do you balance that? How do you measure benefits?
- *Community involvement:* How do you engage in the community? What are some of your outreach projects?
- *Opportunities/Challenges:* What do you find most successful in your community outreach efforts? What do you find challenging or confounding in sustaining effective community involvement?
- *Closing Question:* What opportunities, if any, do you see for these industries to work together on a larger community project?

The logistics of the event will include a buffet dinner from 5:00-6:00 p.m. followed by a half-hour program on the history and highlights of the CAC (Ann Clancy) over the past 25 years along with short speeches by three CAC members about what the CAC means to them: Eileen Morris (founding member), Paul Dextras (Fire Chief), and Joseph Wyatt, (MSU-B student). This will be followed by an hour-long panel discussion. Melanie Schwarz will serve as emcee for the program. There will also be display boards with the history and highlights of the CAC and aerial

photos of the refinery. It was agreed that the Petroleum Club would provide parking validation for the guests.

DEBRIEF OF 2015 MEET IN PARK EVENT

Ann Clancy reported that 423 individuals signed in at the event, which did not include many of the children who attended. Fuddruckers reported selling 572 burgers and 120 hot dogs. The Meet in the Park event included South Side residents, business owners, city officials, visitors, booth presenters, and students from both MSU-B and Rocky Mountain College. This year, there were 15 Billings Metro Vista Project volunteers who helped with the set-up and tear-down of the event and who manned the three registration tables. CAC members were present and assisted in numerous ways. Reverend Melvin Terry did the invocation to begin the event. Two bicycles, numerous gas cards, some restaurant gift certificates, and some toys were raffled off throughout the evening. During the event, the BEAR unit from the Sheriff's office was on site as well as a fire truck and police vehicle. The following CAC member comments were recorded on the successes, learnings and suggestions for improvement from this event:

What Worked Well with the Event

- Fuddruckers was well organized and the food line went well and people were served to the very end (the entire two hours of the event 5-7:00 p.m.).
- The layout of the booths was well organized and having a map with all the vendors listed was very helpful.
- It was very worthwhile to tie the event into the RiverStone Health Gardner's Market. It brought more people.
- Great turnout.
- Liked the vendors/displays that participated; they were interesting.
- Having the Vista Volunteers participate this year made a big difference – they manned all 3 registration tables and helped with setting up and tearing down. We couldn't have done it without them.
- Having the students help with the logistics was very much appreciated.
- Attendees seemed really responsive and many gave their thanks for hosting the event.
- The sound system worked very well – the extra speakers made a big difference.
- Liked seeing city representation at the event—fire, police, Sheriff's Dept., etc.
- Stay in the South Park venue for next year's event.
- We kept on schedule with the announcements and raffles – it went smoothly.
- Liked all the games and trinkets available.
- The logistics went very smoothly.

Concerns/Learnings

- The 3 different colored tickets was a little confusing.
- There was some confusion and last minute changes around vendor stations resulting in some tables close to the gazebo and food being empty while other vendors set up on the periphery.

Suggestions

- Put numbers on the vendor tables that match the map so that vendors can more easily find where they are supposed to be. Hopefully that would also restrain vendors from wanting to change location.

NEXT MEETING: December 8

Location: Petroleum Club, Crowne Plaza Hotel

- Buffet Dinner
- Welcome to 25th Anniversary of CAC
- History of the CAC & Highlights of Achievements over 25 Years
- Panel Discussion on Community-Industry Outreach
- Next Meeting: January retreat session