FEBRUARY 1995

SHELLEGRAM

DEER PARK MANUFACTURING COMPLEX

KNOWING WHAT TO DO IDLH IN IMMEDIATELY DANGEROUS ATMOSPHERES

Besides taxes, April 15 this year is the deadline for another important requirement. It's the day Health and Safety Order S-150 goes into effect and the day departmental procedures are required for carrying out S-150, or IDLH tasks.

IDLH, Immediately Dangerous to Life and Health, is an atmosphere that can immediately affect your life and cause immediate, irreversible, adverse affects to your health.

The Complex is paying particular attention to IDLH atmospheres because of the seriousness of the safety issue. Also, IDLH situations have been misunderstood in the past. Communication issues in particular have caused the IDLH development team to establish tighter requirements, spelling out step-by-step what employees should do while performing IDLH tasks.

Members of the IDLH development team are: JACK DUNN, SOM, E. Dept.; GEN GOOKIN, Metal Crafts; MIKE SMITH, Sr. H&S inspector; DAVID KAYDA, CC&G operator; and DARREN MARTIN, H&S Regulatory Compliance team leader.

In practice, IDLH tasks will require a higher level of permitting communication requirements and additional training. Personnel working in IDLH atmospheres will be issued a level one fire and safety permit. Training packages are also being disseminated throughout the Complex that thoroughly define IDLH and provide tools and charts to better understand and comply with the H&S Order.

"One of the main benefits of the order is that it helps increase communication between the person issuing the permit and the person receiving the permit," says Martin.

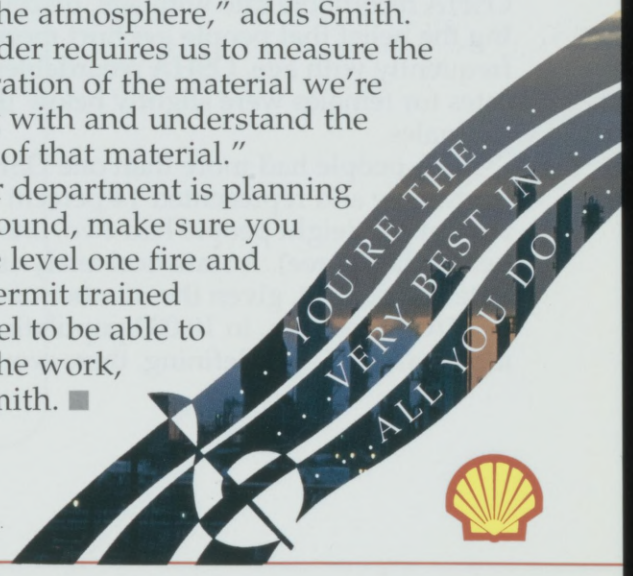
The order requires both parties to go through a checklist together when a permit is being issued so that they each understand the requirements before they start the job, something Martin says is new.

"A review of incidents clearly showed the need to increase communication," says Dunn. "Operators and craftsmen need to know what they're dealing with and know what to do when the unexpected happens. You need to have the steps understood if a block valve leaks, or when an alarm goes off."

Smith is glad to see the arrival of an IDLH order. "The thing we strive for in everything we do out here is consistency," says Smith. "And what this [S-150] is going to do is allow departments and the different crafts doing the work to find there's more consistency on how we do these types of jobs. Although jobs and products are different, there will be a certain amount of consistency on how they are permitted and what people look for."

"Another key requirement is that of testing the atmosphere," adds Smith. "This order requires us to measure the concentration of the material we're working with and understand the hazards of that material."

If your department is planning a turnaround, make sure you have the level one fire and safety permit trained personnel to be able to permit the work, urges Smith. ■



Safety

APPROACHING SAFETY WITH THE FACTS.

TEAM APPLIES FACT-BASED ANALYSIS TO THE SEARCH FOR WHY PEOPLE GET HURT.

Shell Deer Park's Refining Management Team (RMT) is intent on causing a shift in safety performance. They've set a target to operate with an OSHA recordable rate of less than one, and have been applying a unique fact-based analysis process to reach that goal.

"The process has led to a much better understanding of what affects safety performance and what needs to be changed to improve it," says TODD NUNNALLY, EMSE, Engineering Maintenance Support. "It has also catalyzed a cohesive OCAW and Shell management effort to jointly impact Deer Park's safety culture."

Nunnally, who sees one of his primary roles as a facilitator of groups applying root cause analysis and criteria-based solution development, believes as the team does—that the use of rigorous fact-based analysis should be just as successful in understanding why people are getting hurt as it is in understanding the causes of equipment and operational problems.

"I thought it important we begin asking why," says JIM NICHOLS, superintendent, Refining. "It was a way of educating the managers on root cause analysis and a more objective way of looking at safety."

RICK IMIG, manager, Logistics; and JOE LUCIANO, manager, Cat Cracking and Gas, set out to define the problem. A total of 139 OSHA recordable injuries over a 51-month period were analyzed.

"It struck me that we didn't really have an adequate understanding of the data that existed," says Luciano. "The last five years of data did not support our preconceived ideas about who is getting hurt and why. It was a big learning for me."

The study revealed that the overall population tends to have a slightly lower OSHA recordable rate with age, discounting the belief that people get hurt more frequently with age. OSHA recordables rates for females were slightly below that for males.

Nine people had more than one OSHA recordable and represented 14 percent of the injuries (eight people had two, one person had three). A statistical analysis determined that, given the number of OSHA recordables, in 10,000 populations identical to DPMC Refining, there would be eight people with two OSHAs and one with three, concluding that these injuries are potentially a statistical phenomenon versus a "problem group to fix."

The study also revealed there is a slightly higher probability of having an OSHA recordable during the first three years of employment.

In April of last year, RMT members set out to identify systemic causes preventing Refining from achieving the expected safety performance. Twelve OSHA recordables from the problem identification step were analyzed.

Based on their learnings, the team derived systemic causes by developing hypotheses on why commonalities between injury causes existed. They concluded that systemically, knowledge, cultural attitudes and a confusing reward and consequences system result in the present safety performance.

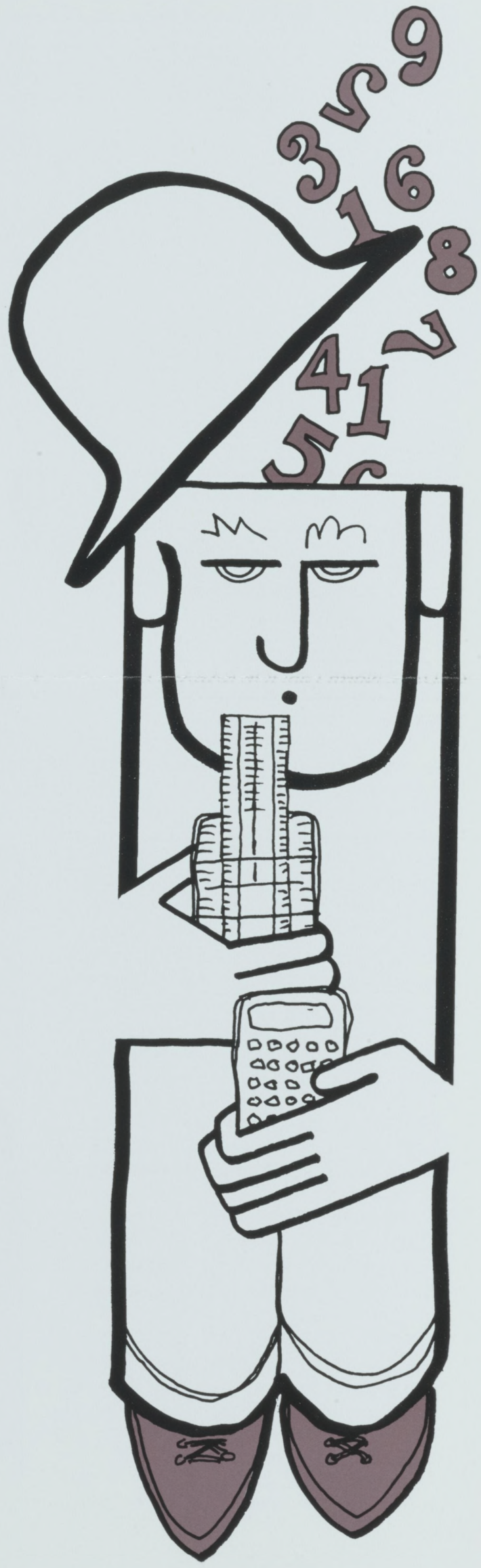
To have a real cultural impact on the organization, the RMT knows it's paramount to involve union leadership in their discoveries and effort. An enthusiastic team of OCAW and RMT membership has been chartered to develop and implement solutions to their systemic issues. The solution team has been working since last October to piece together the best approach to impact DPMC's safety culture.

"There's a lot of talking, a few hurt feelings, sharing ideas, but this has elevated my confidence level that Shell will reduce injuries," says MARSHALL RISINGER, metal crafts, Utilities. "There is dialogue going on outside of the meetings, out in the field, on what is going on. We are telling folks that they [management] are really concerned about safety."

"I have discovered there are so many more integral parts to safety," says PAULA LITTLES, operator, Utilities, and first vice-president of the local union. "There is so much more thought put into it. It has been a really positive experience being a part of this. Even with the amount of work, I would encourage someone today to participate."

"My greatest hope is that it works," says ALEX CHARLES, operator, Dispatching, and union executive board member.

The team is expected to deliver an action plan in the first part of this year which will be implemented over the next three years. ■



SUMIT

THE ACCIDENT INVESTIGATION PROCESS MATURES, HAS NEW GRADUATES

DPMC's SUMIT continues to recruit, train and integrate new facilitators into its ranks as the members of the innovative one-year old program mature in their role within the accident investigation process.

Nine new graduates assumed positions in December, 1994: KEITH JASEK, Utilities; DOUG JOHNSON, Automotive; KARA KENNEDY, Health & Safety; BRETT McGREGOR, Resins; BEBE MORA, Environmental Engineering; DERYL OLDAG, North Lab; JOE RABAGO, Project Engineering/Support; JOHN TRISTAN, C Maintenance; and TOMMY OVERSTREET, Control Systems.

The recent graduates of SUMIT (Shell Union and Management Investigation Team) are out "getting their feet wet" by teaming up with veteran facilitators, according to JIM BEASLEY, Health and Safety, who, along with BOBBY KENT, oversee the program. SUMIT is a joint staff and hourly working team chartered by Shell Deer Park management and the local union leadership to develop a positive, non-threatening way to analyze and prevent reoccurrence of Shell employee injuries.

"They represent the union and management and they come from a variety of areas all over the Complex," says Beasley, "in keeping with our original vision" of a balanced group.

"I'm really proud of the new members and the training they've gone through," says Kent, formerly an operator in Olefins, who is now assigned to co-coordinate SUMIT full-time.

The training, designed to provide the facilitators with appropriate skills, includes team building, communications, presentations, conducting effective meetings, facilitation, and investigation techniques and process.

The Accident Investigation Process continues to improve. According to Beasley, most investigations are completed within 14 days, some as few as two days, from start to finish, "a significant improvement over most of 1994."

The facilitator's role has seen some changes. Two facilitators are now assigned to each investigation so that the team can operate as originally envisioned—more facilitation rather than leading the investigation.

Another improvement is the continued development of a database of investigations, which is expected to provide more information about the accidents that are occurring around the Complex. The database summary will be made accessible to everyone and will also be helpful in designing more effective safety programs in the future, adds Kent.

Two more groups of 15 each are undergoing SUMIT training this year—the first group in the first part of this year, the second group during the second half of this year. ■

FAMILY S.A.F.E. Team Storybook

Use safety first with highway car problems

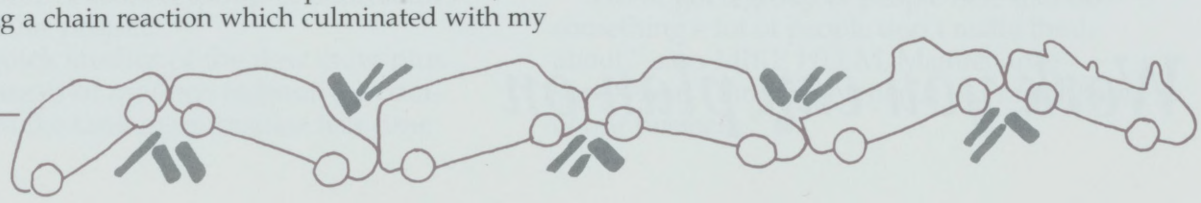
by Van Wagner, Security

Recently a friend stopped to help a motorist change a flat tire on Highway 225 just east of Loop 610. Another driver also stopped to lend assistance.

My friend, an HPD officer, used his patrol car emergency lights and was wearing reflective gear. The second driver was still in his vehicle when a drunk driver slammed into the parked vehicles, starting a chain reaction which culminated with my friend being struck and thrown over 40 feet onto the highway. He was rescued by another (off-duty) officer driving by.

My friend almost lost his life. His family and friends waited hours before learning he would recover—although he will never be free from pain caused by the accident.

Remember this story anytime you see someone about to drive after drinking, or whenever you experience problems with your car (flat, out of gas, overheating, etc.) while on the freeway. Drunks cause accidents and hurt people when they drive! The cost of a new tire, radiator or engine is much less than the cost of life. When you experience car trouble, don't repair by "playing on the highway." Get to safety first.



. . . YOU'RE THE . . . VERY BEST IN . . . ALL YOU DO . . .

DELIVERABLES

- Writing of 200 training modules;
- Configuring 200 computer control screens;
- Providing 2000 worker days of operator class room training;
- Writing 100 procedures for cleaning piping and equipment;
- Writing 500 new procedures for commissioning, startup and operation;
- Writing and managing over 1000 tie-ins between new and existing facilities, including procedure development, pre-job health, safety and environmental reviews, and issuing1000 weekly permits to support the construction activities;
- Developing 75 procedures to manage, plan and execute all the work activities related to commissioning and startup;
- Inputting 24,000 equipment items and 16,000 material items into PER-MAC, and requisitioning over 5,000 spare parts items into stores' stock;
- Identifying and entering 15,000 data points to track and manage inspection records of piping and new facilities;
- Providing over 1,400 worker days of trouble shooting repair training for maintenance crafts;
- Walk-through and field checking (punching) of 130 miles of new piping, 8,000 pieces of instrumentation and 650 pieces of major equipment

Pre-startup is a mountain of preparation

The volume of work completed by the Major Projects Organization in preparation for the upcoming startup of the Coker and related Maya project facilities has been termed "enormous."

Much of the training materials and procedures writing, LCN control system configuration and the management of tie-ins from existing to new facilities have been completed. The Coker, East Site and Offsites areas including the Cogeneration Unit and Du-2 Revamp are expected to startup between mid-January and mid-May.

"It's a significant change that we've involved our operators up front and are having them develop much of our required deliverables," says PAUL GABBARD, manager, East Site Operations. "It's going very well."

"The job assignment was both challenging and rewarding," says DENISE BENSON, Distilling Operations, operator. "I have a greater appreciation for the work performed behind the scenes and those that contribute to the efforts."

"It's really neat to see this many people from this many companies working together toward the one goal–to be the best project ever," says JEFF KLUMP, MPO Startup Support engineer.

"Using operators to develop and conduct training classes and design the screen layout of the TDC-3000 provides an opportunity for the people who will have to operate the units to have a significant input. It also benefits Shell Oil in general," says MAC McGREGOR, E Site operations operator.

MPO Personnel will also be undergoing an intense three-day Pre-Startup Safety Review to assess the completeness of their work and startup readiness before startup is allowed to proceed. The reviews are conducted by non-MPO personnel in accordance with OSHA guidelines.

"Successful completion of these reviews mark a significant milestone for us," says Coker Operations Manager DAN YODER. "They define the completion of our planning and startup preparation activities and permit us to begin the commissioning and startup of our new facilities." ■

The partnership of Proactive Maintenance

Shell Manufacturing, noticing maintenance costs within Shell were running higher than the best performers, recently went to work to become more proactive in that area.

The final product was the Proactive Maintenance Process, a system all Shell locations are applying, whereby proactive maintenance activities are predetermined, anticipated, planned and scheduled in advance. The end result is to prevent or reduce equipment failures and "reactive" maintenance, the goal being to reduce fixed costs. The process is also expected to improve unit reliability.

"It's not a brand new initiative," says JEFF POLZER, EMSE, Engineering Services. "It's the next step in our Maintenance Effectiveness Process and it provides us with maintenance work we can plan."

Proactive Maintenance in practice looks at equipment in the context of the way it is being used, not just by equipment type. Every piece of equipment is analyzed for its probability of failure and impact of failure on the unit after which a proactive maintenance plan is developed to reduce the probability of it failing. The analysis is performed by a core team of the Supervisors of Operations and Maintenance, Engineering Technical Support and Operations staff, Engineering Maintenance Support staff, and Engineers, with specialists brought in as needed.

"It's a partnership of sharing the risks of our maintenance among Engineering, Operations and Maintenance," says Polzer.

The Proactive Maintenance Process is a continuous improvement process. It uses a link to PERMAC to provide feedback for optimizing proactive maintenance activities. It will be a multi-year effort that will be applied to each Chemical unit.

DPMC completed its first Proactive Maintenance analysis at the Crude Isoprene Unit in BPA last October, where it analyzed over 600 pieces of equipment.

"The feeling was it was an effective analysis," comments Polzer. "We eliminated a lot of time-based tasks and developed some new proactive maintenance work for a lot of equipment, including identifying many surveillance and proactive maintenance tasks for operators, which should give them more knowledge and ownership of equipment." ■

Work you can plan on

John Flint, Health & Safety; Robert Poye, Tank Maintenance; and CB&I contractors scan the floor of tank A-327 for possible hydrocarbons as a set of dinosaur-like hydraulic shears behind them pauses from cutting up the tank's flood-damaged floating roof. A-327 is 196 feet in diameter, 56 feet high and has a capacity of 300,914 barrels or 12,638,388 gallons.

What's the big deal about tanks?

Most of us at Shell Deer Park don't really think about those towering clusters of cylinders and spheres we call tank farms that abundantly dot the acres of DPMC; we concern ourselves for the most part with what's inside them. The fact is, tank maintenance is a major force at the Complex, requiring constant care and budgets with which to contend.

Tank Maintenance is charged with handling the scheduling, estimating, maintenance and repairs for that business—making them the caretakers of over 800 tanks. Recently they've been building up a new skilled group of tank maintenance personnel from the Metal Crafts (formerly called boilermakers and pipefitters).

The idea is to turn around each tank from the day it's taken out of service through the day it's put back in. It's been a year in the making and the department is proud of what they've accomplished in such a brief time.

"The last time Shell Deer Park decided to put a crew together it was a diverse group," explains ROBERT POYE, area foreman. "When they combined the two crafts—boilermakers and pipefitters—into a Metals Craft, many of the people assigned back into the tank crew were pipefitters. They didn't have any tank maintenance skills, but they sure adapted and learned real fast."

In a recent "graduation" exercise the crew proved themselves more than able, coming in on time and under budget on a Lube tank project requiring them to completely replace a tank floor. They even beat a more seasoned group of contractors on a similar project.

The quick studies of the new crew plus the advances of modern technology combine to make tank maintenance less time consuming, less costly and more thorough than the old days when crews, for instance, guessed where and how much underside corrosion there was, and scrubbed the floors and walls by hand.

Now ultrasonic scanners locate and measure the thickness of corrosion beneath the steel tank floors, eliminating the guesswork. Other controls help protect the floors from undue underside corrosion.

BEN GOOKIN, who oversees the budgeting and scheduling of tank repairs, talks of magnetic flux excursion, a machine that operates much like magnetic resonance image (MRI), producing a picture of what the underside of a tank floor looks like.

"Now there's no guesswork and every repair must be according to API code," says Gookin.

And that's nothing to sneeze about. Detecting and controlling corrosion isn't cut and dried. What causes a hole in a tank? How can it be controlled? What is the cause of a catastrophic failure of a tank—a bad weld? Bad steel? Sometimes manual cleaning is the last resort when pressure water and chemicals and even an automated robot can't remove the tough adhering pitch.

If the department turned over every tank every 20 years, they would have to work at the rate of 50 tanks per year, not counting the spheres, which turn over approximately every five years.

This year, however, the plan is to take 14 tanks out of service at a cost about $4 million. Aside from minor external work, the job shouldn't have to be repeated until the year 2025.

"We've got a group of people here that do something a lot of people don't really think about," says MIKE HELM, Maintenance supervisor. "Tank maintenance is a major part of our business." ■

Malaysian wax arrives at docks

An anxiously awaited shipment of Royal Dutch Shell manufactured Malaysian synthetic wax arrived this past December, after two years of intricate planning.

The vessel Bow Flower, which had been en route from Bintulu, Malaysia for almost two months, unloaded two grades of a "unique" wax at Shell Deer Park docks Dec. 8. The wax, expected to enhance Shell Lubricant's bottom line through sales, will be sold to a number of customers in the U.S.

The two years of preliminary work was necessary to receive the wax at DPMC's Lubricants plant, according to LEE KUNKEL, Customer Services. Applications for permits were submitted and secured by Head Office Health, Safety & Compliance's PATSY HILL so that the wax could be sold to customers conforming to certified FDA requirements.

Hill collaborated with Westhollow Technology Center's RENEE VAN DER VENNET, "recognized by wax industry officials as one of the more knowledgeable technical people in the United States," adds Kunkel.

An "arduous" mechanical project to prepare several older, out-of-service tanks in Lubricants Logistics tank farm was undertaken by Engineering's MERLE BRYANT. The project was completed ahead of schedule and the pipelines and tanks were ready to receive the wax.

A team at Head Office Lubricants, led by CHARLIE SCHLAUDT, Lubricants Upstream business manager, coordinated the agreement with Royal Dutch-Shell and arranged the details necessary to complete the 'globe-spanning" project. Schlaudt traveled to Bintulu during negotiations to complete the deal.

CHUCK POWERS and STEVE BARRETT, Pecten Chemicals, handled the logistic chartering of the ship that brought the wax to the U.S. JOE HOGAN, Shell U.S. Corporate Accounts manager, Wax Sales; and DAN BECKER, area manager, Head Office Lubricants Sales executed a plan to seek new markets for the wax several years ago, according to Kunkel.

DPMC's BOB SHULTZ, manager, Lubricants, coordinated all aspects of the project from the Complex side of the venture, from a mechanical and logistical standpoint. JERRY MORGAN, DPMC Lube Logistics, was involved in mechanically getting the waxes onshore and getting piping from the tanks to Logistics tank car and truck loading racks.

Shell is one of the largest suppliers of wax to U.S. manufacturers of paper cups. "Plans to market the new wax was tied in part to this market dominance," says Kunkel. ■

On hand at the Lubes loading rack for the arrival of Malaysian wax are (l-r): Lee Kunkel and Jerry Khalaf, Customer Services; Jerry Morgan, David Reaves and Louis Loera, Lube Logistics; Mary Davis, Customer Services; Bob Shultz, Lubricants manager; Dan Becker, Head Office Lubricants sales manager; Renee van der Vennet, Westhollow chemist; Don Whitemon and Ray Wilkerson, Lubes Logistics.

MILESTONES

SERVICE ANNIVERSARIES

25 YEARS

D.J. BURT
Major Projects

D.K. LITTLETAYLOR
Major Projects

R.E. PICKERING
Solvents/Distrib.

J.J. SEDTAL, JR.
Central Maintenance

L.D. SMITH
Central Maintenance

20 YEARS

A.P. DE LOS SANTOS, JR.
Log./Util./Env.

D.W. DOMINY
Control Systems

I.R. GALLEGOS
Cat Cracking/Gas

R.J. SELLERS
Solvents/Distrib.

C.R. SLATEN
Central Maintenance

M.L. STRICKLER
Log./Util./Env.

J.W. WALLS
Solvents/Distrib.

J.L. WILLIAMSON
H&S/Refining

15 YEARS

J.M. ARCHIBALD
PE/CS/QA

L.G. BARNES
Maintenance East

L.M. BENNETT
Central Maintenance

R.W. BRYANT
Control Systems

R.C. DAVIS
BPA4

C.L. GRAYS
Phenol Acetone

W.R. HARTLEY
Heavy Olefins Manufac.

H.E. MEAD, JR.
Pressure Equipment

J.C. NORVELL
MPO/Construc. Assur.

B.M. OWENS
Lube Manufacturing

G. PENA, JR.
Heavy Olefins Manufac.

J.D. WALKER
Solvents/Distrib.

B.L. WILLIAMS
MPO/East Site Oprns.

10 YEARS

DPMC WELCOMES

T.J. ALEXANDER
Human Resources

R.W. ANDERSON
Human Resources

M.S. BUCKLEY
Human Resources

H.W. CHUN
Engineering Support

W.K. CLAY
Human Resources

S.R. COWART
Human Resources

D.R. GALLAGHER
Human Resources

T.F. HOWELL
Human Resources

D.L. KETTLE
Human Resources

P.A. PIERCE
Human Resources

B.F. ROWE
Human Resources

G.L. Thompson
Human Resources

R.J. VALDES
Human Resources

RETIREMENTS

J.D. KIRKLAND
Engineering/Maintenance

J.C. THOMPSON
Central Maintenance

MEMORIAM

EVANUEL COLEMAN, retiree, died in Houston.

FRED T. WILKS, retiree, died Jan. 2 in Pasadena.

Minalk treaters: Quality issue turns success

It was the middle of 1993. Sodium levels in the light and heavy cat cracked gasolines were higher than the folks in Solvents and Treating preferred. They were afraid it might lead to filterability problems, which could mean off-spec product.

TIM NELSON and PATRICK MALONE, Solvents and Treating process engineers, looked at the data, tried to optimize the unit the best they could and got very close—just not close enough.

What happened next proved to be the right decision—installing a new set of Minalk gasoline treaters. Although stretched for time because they did not want the tie-ins and changeover to impact cat cracker operations or the upcoming CCU turnaround (the cat cracker feeds the treaters), the Minalk Project Team and Operations pulled it off. The Minalk units started up at the end of July last year.

The facilities improved DPMC's gasoline quality and offered some other positive advantages, reflect Malone and Nelson.

The unit no longer has to worry about storing and paying to have caustic hauled off since the new treaters use a very small amount of it, says Malone.

"Also there was wastewater generated with the previous treating process," says Nelson. "This new process is not a wet treating process so we don't generate any wastewater to go to the effluent treaters."

"The Minalk Project Team and Operations deserve a lot of credit," says Malone. We were working under a very tight timeline. There were a lot of dedicated persons who worked to make everything come off smooth. We've improved Shell's gasoline quality, and had all these other benefits and so it's been a win-win."■

SCORANOTES

The Shrimp and Crawfish boil will be held May 6. Watch for details and a flyer in April.

Softball will be starting in April. Contact HENDERSON HAMMITT at X1198 or N/N "HAMMITT."

SCORA's first campout of the year is set for Wolf Creek Park on Lake Livingston March 31 – April 1. Reserve a site now — first come, first served. Pre-payment required to register. Call JERRY McDANIEL at X6-6150 or 383-2312

Responsible Care® A Public Commitment

STEP Strategies for Today's Environmental Partnership

Editor's Note: DPMC supports these initiatives: Responsible Care, through the Chemical Manufacturer's Association, is a continuing effort to improve the industry's responsible management of chemicals. STEP, through the American Petroleum Institute, addresses public concerns by improving our industry's environmental health and safety performance.

Maxine Jones, Central Maintenance/Control Systems, is pictured here at a Dickinson Independent School District board meeting. Jones was commended recently by the Dickinson Superintendent of Schools for her dedicated service to the Dickinson community in her role as school board member.

WE HAVE A COMMON GOAL TO KEEP PEOPLE FROM GETTING HURT.

SHELLEGRAM

Deer Park Manufacturing Complex
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