

THE CENTERLINE

Second Quarter 2003
Vol.39, No. 2

Published for the employees and families of the
Navy Public Works Center San Diego.

Vidal Nuno,
floor coverer with the Facilities,
Alteration and Repair Division of the
Maintenance Business Line smooths
the carpet over the steps on a
flight of stairs.



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Top Side Quality Line

War

While you may not think you are directly involved in our country's war with Iraq, think again. There is not a single thing that you can do to help that will be as important as doing what you are supposed to do when you come to work. By focusing on that, you allow others to do what they are supposed to do... by fixing things or checking things or designing things or cleaning things, every thing you do here at PWC San Diego to help support our Navy makes a positive contribution. Before the war started, what some of you may have thought was routine work is now a unique contribution that you can make to support the war effort. Your professional efforts on behalf of everyone of our customers can directly impact our Warfighters' readiness and their quality of life ashore.

From our ship-to-shore utilities personnel to our crane operators and riggers on the piers, from our accounting clerk making sure the paper work is right to our mechanic in recurring who checks to be sure the equipment is right, our services have never been as important to the Fleet as they are today. Occasionally, there are opportunities for us to focus on something special and you provided extraordinary support in establishing a new home for the THIRD Fleet on Naval Base Point Loma... monumental in scope, encompassing cross command cooperation on a scale we have not attempted recently, and completed in a time frame no one could have

reasonably predicted for a project of such magnitude. With the help and determination of many people, you succeeded when others thought the challenge would be overwhelming. Through your focus on getting their buildings ready, you allowed them to focus on moving off the ship and you allowed the ship to focus on deploying. Thank you (and please thank our other customers who may have been delayed while we pushed to complete the THIRD Fleet Ashore project).

As the war continues, we will continue to press forward with the ongoing commercial activities studies in all of our business lines, including the utilities privatization study. We must be relentless in finding additional opportunities for us to improve. Be sure to visit the Intranet at <http://pwc/> for updates to the studies in your business line and please ask questions of your supervisors if necessary. These are trying times for any organization and I recognize that the future is not as certain as it once was... even without the war. I am confident that this uncertainty, while distracting, will not diminish your ability to perform admirably.

And when our Sailors and Marines finally come home, we'll be here to guide them back into familiar surroundings. The Warfighters' are the reason we exist and it will be an honor to welcome them back with you. As always, be safe... please take care of yourself and take care of each other.



THE CENTERLINE

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San Diego, California
Volume 39, Number 2

THE CENTERLINE

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Functional Analysis (FA) Studies



By Don Chick, Business Manager

One of the key components to any successful Competitive Analysis (CA) Study is the support the group under study must buy. Our Maintenance Business Line for instance gets support including material and supplies, information technology, transportation, and financial management from other groups. These support costs may be included in the Maintenance Business Line Most Efficient Organization (MEO) submission. The MEO is the government's bid that is used to compare us to any private sector bidders. Effective and efficient support from these groups is critical if the Maintenance Business Line expects to craft a competitive MEO.

We are currently entering the final stages of the Public Works Center, San Diego (PWCSD) Financial Management, Functional Analysis (FA). An FA is very similar to a CA except there is no competition with the private sector. While most of the changes are occurring in the Comptroller Department, this FA will impact all functions in PWCSD.

The core steps in an FA (or CA) are to; Document the Current State, Benchmark Selected Processes, Develop Future State, Develop Performance Metrics, Perform a Cost Benefit Analysis, and Develop a Transition Plan. These steps will be described briefly below.

Document the Current State: A critical element in any FA is to document the current state. How are we doing, are our customers

satisfied, how much does it cost to perform our assigned tasks, how often do we make mistakes or have rework, how long does it take to complete tasks, and is our workforce trained and motivated? These are just a few of the questions that must be addressed in order to understand our current state.

Benchmark Selected Processes: *After we have understood and documented the current state we then start the benchmarking process. Benchmarking is a method used to compare like functions with those of other organizations. The Financial Management FA utilized a variety of benchmarks in order to see how we were performing in comparison to other organizations.*

Develop the Future State: *Once the current state is known and has been compared (Benchmarked) to other organizations, the future state is developed. This future state utilizes benchmarks and information we have gathered from customers and employees that tell us how well we should be performing in order to be competitive.*

Cost Benefit Analysis (CBA): *A CBA is performed to determine if the proposed future state will be cost effective. The CBA examines a variety issues such as risk, timeliness, quality, and total costs. Cost may cause the FA team to make tradeoffs and changes to the future state.*

Transition Plan: We are currently

in the transition phase of the Financial Management FA. In this phase we actually complete the tasks required to move to the future state. In order to move to this future state we will institute changes in the work place that will impact employees and the way they perform their tasks and introduce new technology.

If a particular function is outsourced, some or all of the support will no longer be required. The cost and effectiveness of support received by a function under study can impact the competitiveness of the MEO. It is imperative that we continuously look for innovative ways to improve effectiveness and efficiency, even if we are not part of a function under a CA Study.

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Steve Mahoney

Command

Evaluation Office



Navy Public Works Center San Diego's Technical Service Division Receives the ISO 9001:2000 Certification

By Sherry Patrick, Public Affairs Specialist and Lynda Fox, ISO Consultant

The Navy Public Works Center San Diego's Technical Service Division recently received certification for the ISO 9001:2000, and is the first Public Works Center to receive this certification.

ISO 9001 is a comprehensive system of quality standards that has gained national and international recognition since its inception in 1987. The American National Standards Institute (ANSI) is the US member body that oversees the standard, guidelines and certification requirements. The power behind ISO 9001 for any organization, regardless of size and product line, is its results oriented standards and guidelines for achieving the highest level of quality products and services and increased customer satisfaction. This standard focuses on clearly identifying and supporting customer requirements, better integration and control of processes, clearly defined documentation, measurement, trace ability and accountability across all processes and areas where work is performed. In addition, it provides a greater leadership role for management in achieving measurable continuous improvements.

The Technical Services Division of the Navy Public Works Center San Diego, provides manufacturing and assembly of parts and components for aircraft systems including electronic assembly, conventional and CNC machining with capabilities for close tolerances, metal finishing, painting and plating, sheet metal and welding and overhaul and repair



Don Etheridge, Technical Services Division Director (front row with tie) Lynda Fox, ISO Consultant (front far right) and the Technical Services ISO Certification Team.

maintenance equipment. With assistance from the ISO 9001 specialist Lynda Fox, Objectives International, Inc., the Technical Services Division implemented a complete ISO 9001 Quality Management System across the organization and was able to complete the rigorous challenge of ISO 9001 certification in 10 months which is a fast track achievement compared to industry practice of two or three years of preparation.

The many benefits from the journey of ISO 9001 certification include higher quality products and services; greater consistency and improvements in on-time delivery; systematic control and improvement in work process areas; efficiencies in planning and resource management; reduction of nonconforming products; effective use of data, decision making and accountability. Overall ISO 9001 will provide a company with significant improvements in cost containment and increased business opportunities because of

its growing recognition, acceptance and demand by customers.

Although undergoing the ISO certification process is considered a monumental challenge for any business undergoing such an exercise, the Technical Services Division worked extremely hard to receive it.

The Technical Service Division's policy is to ensure total customer satisfaction by meeting or exceeding their customer requirements with quality products and services. They continually improved their processes and the effectiveness of their quality management system. The Quality Management Board members for the division include Don Etheridge, Product Line Manager; Rebecca Brandt, Management Analyst; Tad Piney, Production Shop Planner; Steve Abercrombie, Production Shop Planner; Ignacio Delgadillo, Quality Assurance Inspector and Appointed ISO 9001:2000

Management Representative; Rian Lalangan, Electronics Supervisor; Irv Alicea, Machine Shop Supervisor, Gary Clare, Machine Shop Leader, Robert McClure, Machine Shop Supervisor; Joseph Mendez, Metal Finishing Shop Supervisor; Jack Stanton, Outside Machine Shop Supervisor; and Steve Healy, Sheet Metal/Welding Supervisor. With assistance from

consultant Lynda Fox, President of Objectives International, the Technical Service Division developed eight-quality management principles to improve performance. The quality principles are Customer Focus, Leadership, Involvement of people, Process approach, System approach to management, Continual Improvement, and

Factual approach to decision making. "There were long hours and a lot of work put into preparation for this certification and the division could not have completed the task without the assistance from all of our employees," said Donald Etheridge, Technical Service Division Director.



PWC SAN DIEGO SAFETY PROGRAM PLANS

The Navy Public Works Center San Diego (PWCSD) Safety Program was recently stood up again in an effort to provide increased safety and health support for PWC employees. To this end, the Center has provided the appropriate and applicable personnel and material resources for this to happen. There are myriad issues of significance that have been addressed and quite a few plans are in the works to better the working environment for employees. Some of the initiatives include the launching of a Safety Website in an effort to better communicate safety requirements to the workforce. Facility inspection schedules have been revised to minimize the impact on business lines and individual shops, while ensuring more comprehensive inspections are conducted.

There have been enormous changes in the Safety Training Program. This program was completely revised to help supervisors and workers meet the many training requirements mandated by Office of the Chief of Naval Operations (OPNAV). Every topic of training was overhauled and is available (via the Safety Website) for any and all employees to conduct training on



Safety Staff: (left going up) Cathy Lukens, Jackie Ramos, T. Gogue, Ralph Hollingsworth, (top coming down) Doris Turner, Dan Walker, Wayne Ludwig (Safety Manager), and Garrett Shiroma.

their own or in their selected work groups. Supervisors and employees are now able to download training lectures from the website for their use. The course materials include a power point presentation, speaker notes, a preparation sheet (so they know what to bring to class to facilitate training), and a quiz that they can administer. A safety training brochure was created to inform employees as to the course content of training classes, thereby ensuring they know which classes

are required for the work they perform. The Safety Office will also be obtaining state-of-the-art safety and health videos through a subscription service. Supervisors and employees can now request training videos that they'd like to see.

According to Jacqueline Ramos, PWC Safety Training Manager, "We are trying to make the training and education process a proactive and interactive evolution for our employees. Communication is the key to this process, to ensure our employees receive the highest quality training available, when they need it and want it."

In addition to these initiatives, the Safety Office has some other plans that are close to being completed and implemented. According to Wayne Ludwig, PWC Safety Manager, "We want to make the Safety Program one that is the employees' own, as it should be. We administer the program but it is an employee driven program. The EDCSF is a group that helps ensure this and that it is successful." "We've got some good things coming up soon for our employees," said Cathy Lukens, PWC Assistant Safety Manager. "Stay tuned for more."

Employees of the First Quarter for 2003

By Sherry Patrick, Public Affairs Specialist

Since the restructuring of the awards program the number of employees receiving quarterly recognition has increased at the Center. Each business line nominates an employee they feel should be recognized for the quarter with the exception of the Maintenance Business Line, which recognizes four individuals due to the size of the department, the number of employees, and their geographic disbursement. The Maintenance Business Line recognized the following employees for the first quarter of 2003: Steve Abercrombie, Gary Faulk, Terry Baker, and Randy Byers.

Steve Abercrombie, a production shop planner with the Technical Services Division is one of the senior shop planners. Mr.



Steve Abercrombie, Production Shop Planner, Code 580.

Abercrombie is very professional and highly motivated and is always searching for better ways to perform his job and help those around him. He helped set up the planning office and was instrumental in building a working relationship with the Southwest Regional Maintenance Center for projects with naval carriers home ported in San Diego. He was one of the Quality Management Board members for Technical Services

Division who was involved with getting the ISO:9001 Certification.

Gary Faulk, a roofer leader with the Mobile Maintenance Division, Code 536. Mr. Faulk's work ethic demonstrates his exemplary performance of duty. He is organized, and consistent in his job and performs his duties in a



Gary Faulk, Roofer Leader, Code 536.

timely manner. He plans his work schedules in advance so he is prepared when he reports to the job the next day.

Terry Baker, an electrician is the Employee of the Quarter for the First Quarter with the Facilities, Alteration and Repair (FAR) Division located at Marine Corps Air Station Miramar (MCASM). Mr. Baker works on many projects away from his home base at the MCASM. His dependability and attention to detail make him a valuable employee. Mr. Baker's proactive work ethic, leadership and professionalism truly makes him an outstanding employee.

Randy Byers, a maintenance mechanic leader is the Employee of the Quarter for the First Quarter with the Facilities, Alteration and



Terry Baker, electrician, Code 574.

Repair Division, Code 514, located at Naval Base Coronado. Mr. Byers occasionally travels to San Clemente Island on job assignments since he has knowledge and skills in multiple trades. He is professional in dealing with his clients as well as his co-workers, which makes him a valued team member.

The Transportation Business Line selected Dave Brown an automotive transportation specialist as Employee of the Quarter for the First Quarter. Mr. Brown is a dependable employee who is dedicated to his job and the clients he serves. He is conscientious and always willing to take on any task given to him. He accomplished the challenge of reducing the vehicle inventory, while maintaining the clients equipment needs. He developed a purchase plan for vehicles to ensure clients receive the appropriate vehicle to accomplish their mission. His concern is always for the safety of the client and he makes sure the vehicles are in working order. Mr. Brown's



Dave Brown, Automotive Transportation Specialist, Code 703.

dedication to duty and positive attitude makes him an asset to the Transportation Business Line team.

The Utilities Business Line selected Kenneth Ferrenburg, a high voltage electrician leader as Employee of the Quarter for the First Quarter. Mr. Ferrenburg is a working leader who displays a willingness and capability to perform his duties and the ability to lead the work group. He takes time to ensure his peers and workers are familiar with safe work procedures and practices required of their high voltage duties. He works closely with the Utilities Electrical Engineers assisting in design and acquisition of the high voltage electrical distribution equipment necessary to support special customer projects.

The Environmental Business Line selected Jon Desmond as



Kenneth Ferrenburg, High Voltage Electrician Leader, Code 622.

Employee of the Quarter for the First Quarter. Mr. Desmond is a physical science technician in Code 980. He is proactive, innovative and has excellent problem solving and communication skills. Mr. Desmond is a hard worker who is



Jon Desmond, Physical Science Technician, Code 980.

dependable and works very well independently. He takes pride in his work and performs his tasks with a high standard of excellence, which adds value to the Environmental Business Line team.



Ted Alexander, Engineering Technician Code 420.

Ted Alexander, an engineering technician is the Engineering Business Line's Employee of the Quarter for the First Quarter. Mr. Alexander is a dedicated team member. He is willing to assist wherever needed. He recently took over an inventory project and his efforts eliminated costly man-hours and thousands of dollars in inventory costs.



Sherry Patrick, Public Affairs Specialist, Code 09P.

The new awards program also recognizes employees who are not part of the business lines, but are part of the PWC team as well. This part of the team is known as the Key Support Services, which includes the Commanding Officer and Executive Officer Staff, Legal Council, Security, Internal Review, Administration, Comptroller, and Information Systems. I received the honor of being recognized as the Key Support Services Employee of the Quarter for the First Quarter. For those who do not know me, I am a Public Affairs Specialist and can usually be spotted with the 35mm camera or as of late a digital camera taking photos at Command events, but that is not all I do. I am usually working behind the scenes keeping information flowing throughout the Center, providing support for special projects, and researching archive information among other duties. Being the modest person that I am, this is quite strange writing about myself in this article, so I will end by saying I am truly grateful for receiving this special award and in my duties at PWC, what I do, I do for all of you.

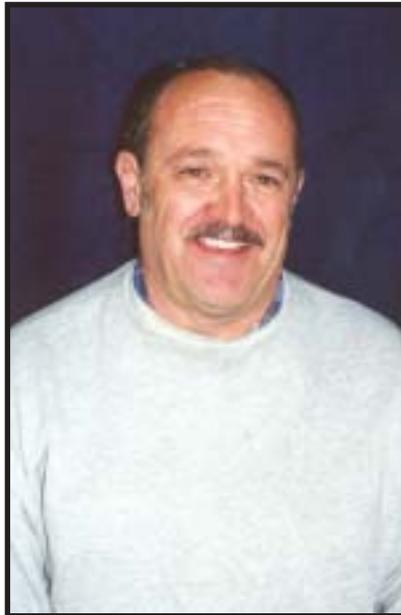
Michael Zaspal is Safety Employee of the Year

By Sherry Patrick, Public Affairs Specialist

Michael Zaspal, a pipe fitter with the Maintenance Business Line, was named Navy Public Works Center's Safety Employee of the Year for 2002. Mr. Zaspal was recognized as the Safety Employee of the Quarter for the First Quarter of 2002.

Mr. Zaspal joined the Navy Public Works Center San Diego in 1970 after working for the National Steel and Shipbuilding Company.

Mr. Zaspal received this recognition based on his contributions within the area of safety. He researches the procurement of tools and safety items that allows the journeymen to work more efficiently and safely. He is actively involved with the stand-up safety meetings and makes his fellow



journeymen aware of the potential hazards he has observed while performing his job and while

assisting others. According to his supervisor Thomas Demolen, "Mike takes the time to perform his tasks safely." Mr. Zaspal provides assistance to less experienced journeymen in the proper methods of using equipment such as drain snakes and pipe threading machines, lessening the possibility of being hurt.

He is constantly alert to potential safety hazards and makes sure the proper procedures are followed and the correct tools are used for each job he performs, as is evident by his zero injury record for the past five years. Mr. Zaspal was surprised to receive the Safety Employee of the Quarter award he was very honored to receive the Safety Employee of the Year. Congratulations, Mike!

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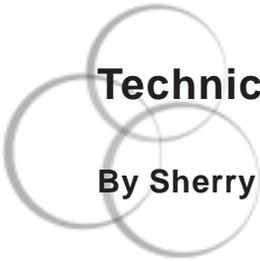
To all bargaining unit employees:

Under Title 5, U. S. Code, Section 7114 (a)(2)(B), a union representative accorded exclusive recognition must be given the opportunity to be present at any examination of a bargaining unit member in connection with an investigation by a management representative if the following conditions exist:

The employee reasonably believes that the examination may result in disciplinary action against the employee; and The employee requests representation.

Please bear in mind that if you do not request a representative, your supervisor is not obligated to advise you of this right, or request a representative on your behalf.

Gene A. Franklin
Personnel Management Advisor



Technical Services Director, Don Etheridge Retires

By Sherry Patrick, Public Affairs Specialist

Family, friends and co-workers filled the largest banquet room at the Harbor Inn Restaurant to bid farewell to Technical Services Division Manager Don Etheridge. Mr. Etheridge retired with 29 years of federal service and most of those years were with the Navy Public Works Center San Diego. Prior to joining the Center, Mr. Etheridge was employed with Janice Electronics, Stromberg Data Graphics and Banister Steel Company. He also served a tour in the United States Navy.

Robert McClure, a model maker supervisor, was master of ceremonies for the retirement ceremony, orchestrating as friends and coworkers presented their farewells to Don Etheridge. Former commanding officers and clients were present to bid him fair winds.

"I've always had a fondness in my heart for Don and the gang and I always enjoyed going to the Tech Services shop and saying hello once a quarter. The reason is because I knew I was walking into one of the finest tech services shops that exist in the world, and that's a credit to all of you," said Captain Andrew Brunhart, Chief of Staff, Navy Region Southwest.

Among the stories shared about Don Etheridge, were examples of his caring personality, loyalty, professionalism, and his great ability as a leader who possess true customer service. He loved his job and enjoyed working with his crew at Naval Base Point

Loma. His goal was to make the Navy Public Works Center San Diego the best place to work. Navy Public Works Center San Diego's Business Manager Dr. Don Chick said, "It has been a pleasure working with Don Etheridge and knowing Don, he exemplifies everything we want to see in a manager in the government. I wish you and Judi well in your retirement."

Mr. Etheridge's work ethic demonstrated how he felt about his job, his employees and the Center. He was an excellent manager and believed in the principles of the 7 Habits.

"Don really cares about his employees and is extremely proud and wants everyone to know about the good work they do. I don't expect to see a beat skipped in the transition of leadership within the Technical Services Division because Don's incredible talent has been spread around to everyone in the Technical Services Division. Thank you for the incredible job that you have done," said Debbie Fisher, Maintenance Business Line Manager.

Floyd Spencer, Marketing Director for the Navy Surface Warfare Center in Crane, Indiana, a Navy Public Works Center client, experienced much satisfaction from the products and service Don Etheridge and his crew provide.

"I would like to ditto all of the comments that all the speakers have said before me about Don. Loyalty, professionalism, ethical, a



great leader and I consider Don a great friend. I want to congratulate you and Judi on your retirement."

Navy Public Works Center's Commanding Officer Capt. Jim Barrett presented Don Etheridge with the Meritorious Civilian Service Award for his superior performance of his duty and his exceptional leadership of the Technical Service Division. Executive Officer Capt. Mark Handley presented Mr. Etheridge his retirement letter and plaque officially retiring him. The ceremony could not end without words from Don Etheridge himself.

"I really appreciate all of you being here and the support that we always had when we worked together. Everyone partnered together and I really appreciate the networking that we've been able to do. Thank you." Congratulations Don, and from all your friends here at PWC San Diego, we wish you Fair Winds and Following Seas.

Sandra Hoch is First Quarter Safety Employee of the Quarter

By Sherry Patrick, Public Affairs Specialist

Sandra Hoch was selected as the Safety Employee of the First Quarter for 2003. Ms. Hoch, an electric power controller with the Utilities Business Line, received this recognition for her exceptional support in the Center's safety program. She supports the Co-generation Plant by providing a safe working environment and performing monthly inspections of work areas. Ms. Hoch updates the Authorized Use List (AUL), and she is responsible for inspecting two co-generation and boiler plants making sure they remain in safe working condition. If there are any unsafe or unhealthy conditions, Ms. Hoch takes the appropriate action to correct deficiencies.

Ms. Hoch is actively involved in the safety program at the division level. She conducts division stand-up safety meetings, safety training, and shows safety training films to



keep her coworkers abreast on current safety practices. Ms. Hoch is a dedicated team member who provides assistance to her fellow employees not only with safety, but she also lends a hand with Internet training. She demonstrates leadership skills in her performance of job site safety

awareness, and she provides assistance during NAVOSH inspections and takes charge in correcting any safety deficiencies.

Ms. Hoch is focused and always prepared, which was illustrated by her reaction to an emergency situation when the Naval Hospital San Diego, when a tripped transfer switch brought power turbines off line. Ms. Hoch took immediate action by checking the transfer switch out, resetting the equipment and putting everything back on line, restoring power.

Ms. Hoch is a dedicated employee who is very safety conscious and who cares about keeping her coworkers safe.

Congratulations, Sandra, on receiving Safety Employee of the Quarter!



Jim Oberlies, a plumber with the Facilities, Alteration and Repair Division, Code 554 checks the level of the plumbing hinges.



Transportation Supervisor, Dean Lewis Receives First Supervisor of the Quarter Award



By Sherry Patrick, Public Affairs Specialist

As part of the new awards recognition programs, a new level of recognition was implemented for first line supervisors. The Supervisor of the Quarter will recognize supervisors within all PWC Business Lines. The first Supervisor of the Quarter award was presented to Dean Lewis, an automotive mechanic supervisor, with the Transportation Business Line at Naval Base Coronado.



as evident by the way his division operates. His use of the 7 Habits Principles acknowledges that he empowers his employees and includes them in the decision-making process, which gives them the understanding that they make a difference in the success of the organization.

Mr. Lewis' recognition as supervisor of the Quarter is due in part to his dedication to making the processes which affect his work center run smoothly. He recently participated in a process action team to develop new processes to reduce the number of past due preventive maintenance on vehicles, and provided input for an operating procedure that would clearly define roles of each division within the Transportation Business Line. This process effectively provides information to our clients regarding cost reimbursable charges for certain maintenance beyond the normal wear and tear of their vehicles.

"Dean consistently communicates to his personnel, informing them of activities surrounding shop activities, and the command. He is a dedicated and conscientious supervisor who willingly accepts all challenges and is very motivated in improving the quality of service we provide."

PWC CO Capt. Jim Barrett caught Mr. Lewis by surprise when he announced that he was being recognized as the first Supervisor of the Quarter for 2003.

"I feel very honored to receive the first Supervisor of the Quarter award. I take a lot of pride in doing the best job that I can and I am very elated to be recognized for it. The people that work for me are a big part of why I was chosen and I would to thank all that work for me now and all the others that have worked for me in the past," said Dean Lewis.

According Mike Malaca, Transportation Division Director,

Mr. Lewis understands the need for training in his division and he helped organize and schedule technical training such as Basic Hydraulics, and Transmission Electronics Diagnostics for his personnel to develop their skills.

Congratulations, Dean, on receiving the first Supervisor of the Quarter award!

Mr. Lewis' leadership style has directly impacted the upward movement of his personnel



Industrial Equipment Mechanic Reynaldo Caneda, with the Utilities Business Line Code 650 adjusting a conducting meter.





Ergonomic Tool Prevents Injuries at PWC Environmental Laboratory

By T. Gogue, Safety Specialist

Laboratory technicians risk chemical injuries and burns every day from hazardous chemicals. They are also exposed to some ergonomic hazards that may be found in other work environments. Laboratory ergonomic hazards include maintaining awkward and static postures, repetitive motions, strain on muscles and tendons of the neck, arms, legs and lower back, and contact stresses from prolonged gripping of funnels and other laboratory glassware. Ergonomics is the science of fitting the work to the worker, instead of requiring the worker to adapt to existing working conditions.

Laboratory technicians in the Environmental Business Line routinely use specialized funnel equipment during the performance of their duties. This funnel is used to separate multiple chemical compounds in each sample. The funnels have stoppers and stopcock valves to prevent leakage when the funnel is shaken or agitated. Agitation is periodically interrupted, and the stopcock is opened to release the pressure that builds up in the separatory funnel during agitation. The separation process removes matter from the environmental sample that would otherwise interfere with identification of the category and the amount of the chemicals that are being analyzed.

Extractions used to be accomplished at the PWC Environmental Laboratory by a hand-held method that was often a lengthy and laborious process for lab technicians. Each sample was placed in a different separatory funnel, each of which a technician had to shake six successive

times. The funnels had to be shaken by hand for one and one-half minutes each of the six times. Since a typical batch to be tested consists of ten samples, technicians had to agitate the samples by hand for a total of 90 minutes per batch.

Laboratory technicians used pinch grip separatory funnels while agitating them by hand. Over time, pinch gripping resulted in hand and wrist discomfort for laboratory technicians. Continual shaking of the arm and shoulder also led to fatigue. In addition, laboratory technicians complained of leg strain and neck, arm, and lower back pain due to hand shaking of separatory funnels, as well as standing and reaching while working with the chemical samples in a laboratory fume hood.

Work tasks that require maintaining an awkward posture for long periods of time can strain and fatigue the muscles used to hold that posture while working in that position. This strain may lead to a cumulative trauma disorder, or CTD, a name given to a group of disabilities that usually involve muscle weakness and discomfort. The discomfort often improves after discontinuing activities that weaken the affected muscles and getting medical treatment for the CTD. Work tasks that included chemical extractions used to put workers at risk for developing repetitive strain injuries and CTDs.

The Environmental Business Line requested that Ms. Christina Graulau, the laboratory's Safety Coordinator, identify and evaluate ergonomic hazards associated with using hand-held glass

separatory funnels. Her findings were provided to the PWC Employee Driven Cultural Safety Forum (EDCSF) for review and recommendations. The EDCSF obtained approval via the Executive Steering Committee to purchase one automatic separatory funnel shaker that accommodates up to four separatory funnels. Funding for the automatic separatory funnel shaker was provided from the PWC ergonomic funding budget.

Use of the automatic separatory funnel shaker alleviates fatigue and muscle strains that were previously caused by extended periods of shaking separatory funnels by hand. The automatic separatory funnel also greatly reduces the length of standing time required by lab technicians during extractions. The automatic shaker times the simultaneous agitation up to four separatory funnels for the required one and a half-minute agitation periods. The automatic timer frees up technicians to work on other laboratory tasks during the separation procedure. When the automatic shaker is finished, the timer notifies laboratory personnel that the separation has been completed.

The automatic separatory funnel shaker provides benefits in addition to ergonomic relief. Laboratory technicians now handle the glass funnels less frequently, reducing the risk of breakage, lacerations from broken glass, and chemical burns. The automatic separatory funnel shaker has greatly improved ergonomic comfort, productivity, and job satisfaction while lowering risk of occupational injuries and Cumulative Trauma Disorder or CTDs.