OEC’s Educational Outreach

The Offshore Energy Center is dedicated to expanding the awareness of the vast energy resources available beneath the world’s oceans and to chronicle the unique heritage and technological accomplishments of an industry that discovers, produces and delivers these resources to mankind in a safe and environmentally responsible way.

A ‘STAR’ IS BORN

To accomplish this mission, the Offshore Energy Center (OEC) embarked on three initiatives. First, in 1995, thanks donations from companies, organizations and individuals, OEC acquired the Ocean Star, a retired jackup drilling rig. It was completely refurbished, moved to Pier 19 in Galveston and, in 1997, was launched as an international offshore industry educational resource and a major Gulf Coast tourist attraction. Three floors of more than 70 hands-on learning activities and educational exhibits related to the offshore energy topics of earth science, environmental science, seismology, math, engineering, technology and history await student field trips, teachers and educators, industry tours, Boy and Girl Scout Troops, families and the general public.

In the ten years since it opened, 350,000 visitors from across the US and other countries have toured the Ocean Star and experienced the offshore energy industry first-hand.

In the second initiative, OEC established in 1998 a Hall of Fame to honor innovators and leaders in the international offshore energy industry, many of whom became legendary. Whether for their vision, drive, business acumen, or ability to search, innovate, or lead the way, OEC recognizes these Hall of Fame members as Industry Pioneers.

The center also recognizes pioneering offshore technologies. Certain technologies stand out as milestones in development of offshore resources. OEC has honored many of those companies and individuals as Technology Pioneers.

OEC soon realized that a visit to the Ocean Star wasn’t possible for everyone. In 1999, the OEC embarked on its third initiative, the Education Outreach Program. Its mission is to promote awareness and understanding of off-
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CONTRACTOR are available, but a capital campaign is under way to secure funding to increase the inventory and enable utilization across the nation in tandem with the Knowledge Box.

PE³ CURRICULUM GUIDE

In 2001, teacher workshops were implemented to introduce the offshore energy industry to the classroom. A new mobile exhibit was developed jointly with the American Association of Drilling Engineers (AADE) called “The Knowledge Box.” The exhibit is full of interactive technology, models, hands-on activities, posters, and multimedia presentations showcasing the science of the offshore industry, for students in grades 6-12.

Upon completion of the workshops, teachers are eligible to reserve the Knowledge Box for their classroom use for a period of 30 days. These 6-hour workshops can be held at the Ocean Star or other locations. Each teacher also receives 6 hours of Continuing Professional Education (CPE) credit from the Texas Education Agency. Thanks to its widespread acceptance by both teachers and students, and funding from the energy industry, the Knowledge Box program has expanded significantly, and as of this writing, 35 boxes are available for use across the nation and in Canada.

In 2006, a second OEC mobile exhibit was developed through funding by Halliburton – the “Playing with Petroleum Kit” for grades K–5. This kit features books, microfossil rubbing plates, sedimentation tubes, multimedia presentations and interactive technology to complement teacher workshop presentations.

This is also a free traveling mobile unit that is available to teachers who have completed a 6-hour workshop. Once again, teachers receive 6 hours of CPE credit. Currently only 4 of these kits are available, but a capital campaign is under way to secure funding to increase the inventory and enable utilization across the nation in tandem with the Knowledge Box.

PE³ CURRICULUM GUIDE

Also in 2006, with AADE funding, OEC developed a multidisciplinary curriculum guide for grades K-12 featuring 24 hands-on learning and discovery activities, called Project E³: Expanding Energy Education (PE³). Correlated to state and national standards, this educators’ resource emphasizes an offshore energy theme through exercises in math, physics, chemistry, music, social studies, engineering, earth science, safety and environmental science.

By being cross-curricular, PE³ provides the opportunity for energy-related themes to be utilized frequently and continually in the classroom, with the Knowledge Box and Playing with Petroleum Kit being “front and center” when the classroom science curriculum focuses on energy. Activities from the PE³ curriculum guide are presented at all OEC teacher workshops, and each attendee receives a copy of the guide to use in their classroom. Within three years, OEC plans to expand the PE³ curriculum guide from its current 24 lessons to 50 activities.

More recently, with funding from energy and energy service companies, through its Vision 2016 capital campaign (that includes all of the OEC Education Outreach program), teachers can attend all workshops held at the Ocean Star at no charge and will receive complimentary lunch, snacks, the PE³-Expanding Energy Education curriculum guide, and a $25 travel stipend.

FACILITATOR TRAINING

Teachers, industry trainers, professionals and classroom volunteers can become facilitators of the PE³ curriculum by attending an in-depth three-day workshop at the Ocean Star. During their facilitator training, participants were also introduced to the components of the Knowledge Box and Playing with Petroleum Kit. As an OEC-certified facilitator, these individuals will then arrange and conduct teacher workshops utilizing the PE³ curriculum and are also able to offer the use of both of these mobile exhibits.

The first facilitator training occurred in October 2006. The most recent facilitator training took place 9-11 June 2007 at the Ocean Star. Educators attending the workshops came from Alaska, California, Louisiana, Nevada, Ohio and Texas and included educators from the Houston Museum of Natural Science and the Canadian Petroleum Discovery Center. Attendees toured Halliburton’s Real Time Decision Center at Landmark Graphics. To date, there are now more than 40 OEC facilitators. The next Facilitator Conference for 25 educators is scheduled for 26-28 October 2007.

Teacher workshops have also been scheduled at schools, colleges, universities and energy company offices. The OEC has even collaborated with the Houston Museum of Natural Science to offer workshops at their facility. If educators cannot travel to the Ocean Star, the OEC can go to you.

Recently, an OEC facilitator trained 30 teachers at the Houston Community College Northeast Campus and 25 at the University of Houston Clear Lake Campus. Another OEC facilitator – a professor at Steven F Austin University – facilitated workshops for 60 current and pre-service educators. The OEC has other workshops scheduled for Rice...
OEC's Educational Outreach

CISD in Eagle Lake, Texas, Lafayette Parish Schools, and Region XI in Fort Worth, which are funded by various entities.

The OEC also makes a presence at area conferences and meetings, setting up booths, passing out workshop flyers, and their education programs guide. See Hear & Do (funded by P.E.S.A.) at science teacher meetings such as the National Middle School Conference, Houston Independent School District New Teacher Induction Institute, Cub Scout Informational Fair, Houston A+ Challenge Externship Program and Conference for the Advancement of Science Teachers. Networking with teachers, administrators and others involved in energy education is vital to the OEC.

The Education Director of the OEC, Doris Tomas, a former teacher and assistant principal, has been a member of the National Education Energy Development Project (NEED) teacher advisory board for seven years. Knowing the importance of teacher input, Ms Tomas set up a teacher board at the OEC. The teachers are part of the Offshore Energy Center Education Committee (OECEC).

These teachers meet to organize workshops, develop curriculum, recruit teachers for workshops and align curriculum and the PE³ to various state standards. Educators invited to become part of OECEC were selected based on their energy connections. Many are NEED facilitators, BP ambassadors, OEC facilitators and BP grant readers; all are currently or were science teachers. OECEC members are Philip Burrow, Nina Corley, Kirah Diaz, Darren Fisher, Amber Meuth, Lynn Paulsen, Joy Sloan and Cheryl Stephens.

OECEC member Lynn Paulsen has said, “Since Houston is the energy capital, students should be aware of what is in their ‘own back yard.’ I think they should know as much about an oil rig or production platform as a Panda. They are consumers, and the majority of the products come from petroleum. Students must be taught the vital role that petroleum plays in all of our lives, not just gasoline for vehicles. From the discovery to extraction to processing offers the opportunity to teach all of the sciences and math. Why not utilize the oil and gas industry in our classrooms? It is an exciting business and one that for some reason, people know little about.”

These photos taken at the Ocean Star show the variety of topics covered. Three floors of more than 70 hands-on learning activities and educational exhibits related to the offshore energy topics of earth science, environmental science, seismology, math, engineering, technology and history are available for student field trips, teachers and educators, industry tours, Boy and Girl Scout Troops, families and the general public. In the ten years since it opened, 350,000 visitors from across the US and other countries have toured the Ocean Star and experienced the offshore energy industry first-hand.
Another OECEC member Phil Burrow believes that “The PWP, Knowledge Box and PE³ are extremely important seminars for teachers. Many teachers think of the petroleum industry as heavy polluters, not concerned with safety and only interested in the dollar. After completing the seminar, they have learned the industry is extremely protective of the environment, have safety first and always first, and drilling for petroleum is an expensive and risky business.”

**Earth’s Energy**

Earth’s Energy, an energy guide sponsored by ExxonMobil and OEC in partnership with the Houston Chronicle’s “Chronicle in Education” program, was sent out to 430 teachers during February 2006 (a 20% increase over the number requested and utilized in 2005). The participating teachers receive a free classroom subscription to the Houston Chronicle and a free classroom set of Earth’s Energy Student guides. The students engage in science, technology and social studies TEKS objectives as they study the rock and carbon cycles, petroleum and natural gas, offshore drilling, environmental issues and careers in the offshore energy industry. Earth’s Energy will be available again in February 2008.

**New Career Exhibit**

A new exhibit “Energy at Work” opened in 2007 that focuses on careers in the energy industry. The Ocean Star will host career fairs for students to have the opportunity to learn about the industry from energy companies, energy service companies, drilling contractors and equipment manufacturers of the career opportunities that their companies can offer. OEC will bring in students from various school districts, those currently enrolled in community colleges and universities, in the hopes they can be encouraged to seek a career in the industry.

**It’s a Numbers Game**

Here are some numbers that add up to success:

- If OEC conducts 24 workshops each year,
- And if each OEC trained facilitator conducts a minimum of 2 workshops per year,
- And each workshop averages 16 teachers,
- And each elementary classroom has an average of 30 students per class,
- And each 8-12th grade classroom has an average of 100 students per class,

How many students can be impacted annually by the OEC’s programs? – You do the math! ☝️

Hundreds of classrooms received Earth’s Energy, an energy guide sponsored by OEC and ExxonMobil in collaboration with the Houston Chronicle’s Chronicle in Education program. Earth’s Energy will become available again in February 2008.