

# UA Journal

THE UNITED ASSOCIATION

UNION PLUMBERS, PIPEFITTERS, SPRINKLERFITTERS, STEAMFITTERS AND SERVICE TECHS



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Apprentice Cody Lish,  
Local 648, Pocatello, Idaho





Journeyman John Egerer,  
Local 30, Billings, Montana





# HOKU Materials' Polysilicon Plant:

On the Job with Plumbers  
and Pipefitters Local 648,  
Pocatello, Idaho



**Perseverance**, determination, and faith in your members' ability to do a good job drove Plumbers and Pipefitters Local 648 Business Manager Rod Fuger and the members of Local 648 to win the job of building Hoku Materials' polysilicon manufacturing plant in Pocatello, Idaho. Hoku Corporation is a solar products and services company operating two business units: Hoku Materials and Hoku Solar. Hoku Materials is preparing to manufacture, market, and sell polysilicon for the solar market with the feedstock that comes from its brand new plant. Polysilicon is an essential raw material, which is used in the production of solar cells for solar panels that convert sunlight to electricity for homes, businesses and farms.



General Superintendant Mike Mears, Local 26, Western Washington; International Representative Jimmy Moss, JH Kelly Vice President Terry Majors; Local 648 Business Manager Rod Fuger; JH Kelly Project Manager Pat Wilson; JH Kelly President Mason Evans





United Association  
Plumbers & Pipefitters  
Local 648 Pocatello, Idaho

Journeyman Mike Fish, Local 296, Boise, Idaho

The JH Kelly team at the Hoku Materials' polysilicon plant

When Hoku Materials set up its office in Pocatello, Idaho, and it was clear that the polysilicon manufacturing plant project was moving forward, Plumbers and Pipefitters Local 648 Business Manager Rod Fuger went to work to secure the job for his members. The initial project, which broke ground in 2007, was huge and included process units, storage and loading facilities, support buildings, and all associated plant infrastructure.

Brother Fuger stated, "I stopped by the Hoku office several times a week for several weeks. When I finally

caught somebody at the office, I persisted until they would give me my '15 minutes' to discuss not only what the UA could do for their project, but also the Idaho Building Trades Council. I gave them CDs of the UA training programs, copies of the *UA Journal* highlighting other projects, and also letters of recommendation from fairly large projects that Local 648 members had completed."

The challenge was to ensure Hoku that the local could man the job with experienced expert craftsmen. Brother Fuger's efforts soon paid off, as UA

craftsmen arrived on the job working for JH Kelly, a fourth-generation, family-owned construction company that would oversee all aspects of construction on the project.

The process of producing polysilicon begins with quartz or sand, which is refined into metallurgical grade silicon (MGS). MGS is then purified through various chemical processes. There are two technologies for producing polysilicon from silicon gases. The Hoku plant will use the Siemens Reactor Method, which was developed in the 1950s and has a history of proven reli-





**International Representative Jimmy Moss, Journeyman John Elger, Local 350, Reno, Nevada**



**Journeyman Tracy Garza, Local 648, Pocatello, Idaho**

bility and durability, as well as high-purity content. In this method, the silane or trichlorosilane gas is introduced into a thermal decomposition furnace (reactor) with high-temperature polysilicon rods inside a cooled bell jar. The silicon contained in the gas will deposit on the heated rods, which gradually grow until the desired diameter has been reached. The end product is in the form of rods or chunks. A plant this size is expected to produce up to 4,000 metric tons of chunk polysilicon per year.

Nestled on 67 acres, the Hoku Mate-

rials' polysilicon plant is getting close to completion. Responsible for all of the process pipe installation and the setting of 16 deposition reactors and eight hydrogenation reactors are 200-plus journeymen and apprentices from Plumbers and Pipefitters Local 648, as well as a myriad of travelers, roughly 65 percent, who journeyed to Pocatello to work on the job. In addition, the skilled UA craftsmen have installed 20 gas consoles, four vaporizers, 16 wash consoles, 16 process exhaust coolers, 13 pieces of equipment for the water wash area, and 81 pieces of equipment for

the HVAC system.

The process pipe on this job has totaled 255,000 linear feet (LF). In addition, Local 648 journeymen and apprentices, along with their brothers and sisters from other locals, have built and installed roughly a mile of utility pipe racks. Pipe on the project includes 130,000 LF of aboveground carbon steel, 92,000 LF of aboveground stainless steel, 6,000 LF of underground cooling water pipe, 17,000 LF of underground fire water pipe, 7,000 LF of aboveground PVC pipe, and 3,000 LF of aboveground fiberglass reinforced





**Journeyman Dan Mandelko, Local 459, Missoula, Montana**



**Journeyman Greg McHaley, Local 648, Pocatello, Idaho**



**Journeyman Jake Hoover, Local 648, Pocatello, Idaho**

pipe. The total number of welds on this project has been recorded at 18,544.

Welding has always been a strong craft within the UA, and the welds on this job have been an excellent example of that. The polysilicon plant has the feel of a refinery, with a majority of the work outside. Working on pipe in the winter in Idaho has numerous challenges, but the journeymen and apprentices of Local 648 were up for the challenge, and looking down the lines of pipe, UA craftsmanship is clearly evident.

Business Manager Rod Fuger added, "What has been amazing on this project is the commitment of Local 648 members and UA members from other locals. These men and women have endured very hot summers, below zero temperatures in the winter, howling winds, and the start-ups and stops of the project. Even with the weather conditions, productivity has been excellent—and all with a very low weld x-ray rejection rate."

Pat Wilson, project manager, stated, "I have managed large projects all over the country for JH Kelly, and the UA's

workforce here at the Hoku polysilicon plant is as quality and productivity conscious as any workforce I have ever seen. Their efforts have been very impres-

sive. As well as completing all of the milestones on time, the craftsmen on this job have never lost sight of our number one value—a safe jobsite." It was noted that the UA journeymen and apprentices, along with other union trades at the Hoku polysilicon plant, have worked close to one million manhours with a recordable incident rate of 1.22. That in itself is an outstanding feat.

Journeymen and apprentices from Plumbers and Pipefitters Local 26, Western Washington, working for JH Kelly at its state-of-the-art Longview, Washington, fabrication shop, have also been responsible for the vast amount of pipe fabricated for this project. At the time of this writing, 45,100 craft fab shop hours had been logged from 2008 through 2010. The work skyrocketed in 2010 with 31,000 hours logged.

Local 648 Business Manager Rod Fuger is the first to give the mayor of



**Journeyman Reed Pragitzer, Local 648, Pocatello, Idaho**





Journeyman Mike Webb, Local 648, Pocatello, Idaho



Journeyman Jared Shapper, Local 648, Pocatello, Idaho



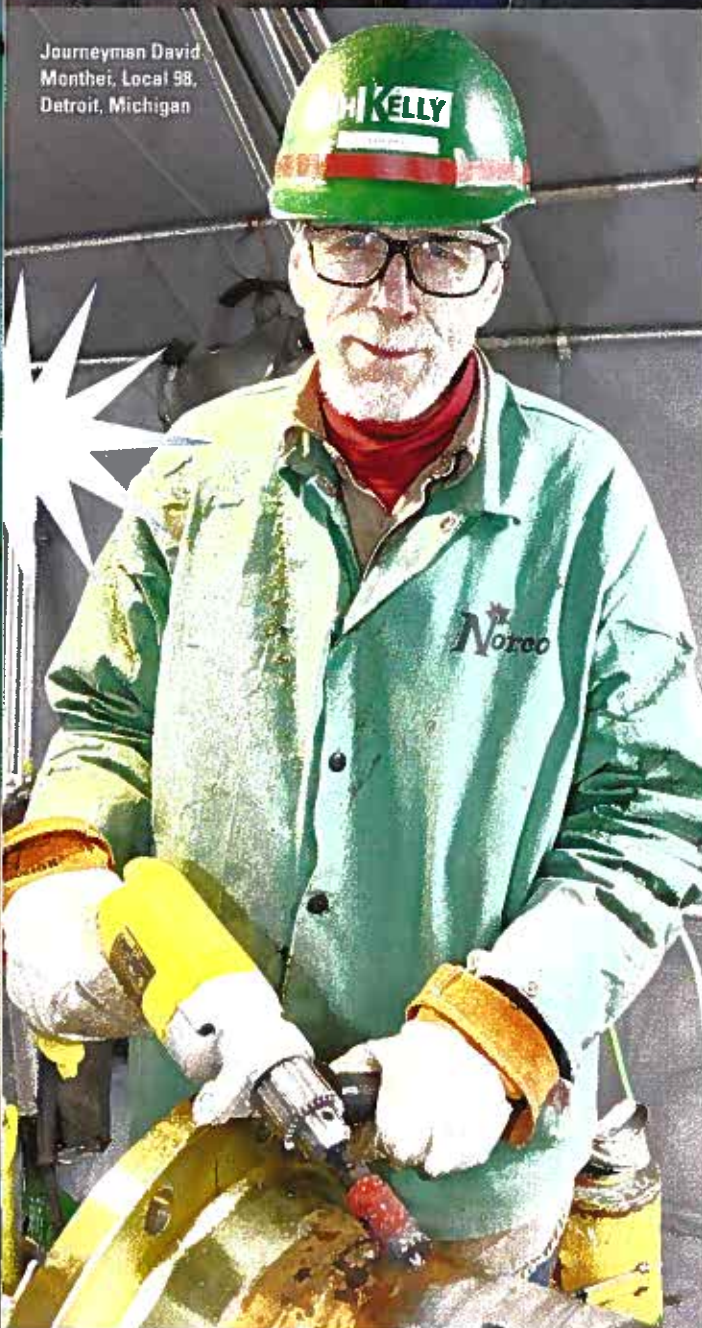
Journeyman Bob Madsen, Local 140, Salt Lake City, Utah



Apprentice Dan Carter, Local 648, Pocatello, Idaho



Foreman Tom Melton, Local 648, Pocatello, Idaho; Journeyman Thomas Schmidt, Local 30, Billings, Montana



Journeyman David Monthei, Local 98, Detroit, Michigan





Journeyman  
Scott Vergobbi,  
Local 44,  
Spokane,  
Washington



General Foreman Cody Wilson,  
Local 290, Portland, Oregon



Journeyman Josh Hogander,  
Local 296, Boise, Idaho



Journeyman Dwight Latta,  
Local 597, Chicago, Illinois



Apprentice Anthony Chavez,  
Local 648, Pocatello, Idaho

Pocatello at the time, Roger Chase, an enormous amount of credit for closing the deal with Hoku. The state of Idaho pursued the polysilicon plant project with its innovative tax incentives and maintains that it has a lot invested in the Hoku plant. The town was able to secure a piece of property, with all of the required infrastructures in place, which was very attractive to Hoku. This was after an initial purchase fell through. Hard work secured a new piece of property within a week.

Polysilicon plants use a lot of power. The low cost of power in Idaho was one of the factors that made the city attractive to Hoku. The city of Pocatello was able to secure two loops of low-cost power for the plant. One was the

old substation located next to the plant, and the other loop came from the city. In the event of an outage, the plant would be able to switch to the other loop.

Hoku had signed a \$43 million tax increment financing deal with Pocatello and a deal with Idaho Power. The deal stated that the plant would receive enough power (guaranteed) to support 4,000 metric tons of polysilicon production annually at a low-cost fixed rate for four years. These incentives, as well as an available skilled, productive workforce, lured Hoku to Pocatello and made the bid for a polysilicon manufacturing plant in Idaho a reality.

In the spring of 2010, the Hoku

polysilicon plant successfully produced polysilicon for the very first time. This occurred after completing a comprehensive system commissioning protocol, which culminated in deposition runs in a select number of its installed polysilicon reactors. The testing occurred to confirm system integrity, as well as to validate operating procedures. Hoku announced that it operated the reactors continuously for five days during the final phases of the commissioning procedure.

After a positive testing period, Scott Paul, president and CEO of Hoku Corporation, announced, "This is an historic day for Hoku. We have completed the first step in our planned production ramp-up and successfully





Journeyman Sergio Ayala, Local 412, Albuquerque, New Mexico



General Foreman Clay Wilkie, Local 648, Pocatello, Idaho; Journeyman Gene Holmes, Local 296, Boise, Idaho



General Foreman Ed Morris, Local 648, Pocatello, Idaho; Foreman David Anderson, Local 648, Pocatello, Idaho



Journeyman Todd Johnson, Local 140, Salt Lake City, Utah



Journeyman Josh Noriega, Local 140, Salt Lake City, Utah



Steward Bryan Bowman, Local 648, Pocatello, Idaho; General Foreman Jared Steed, Local 648, Pocatello, Idaho; General Superintendent Mike Mears, Local 26, Western Washington



Bottom row, left to right are Apprentice Scott Poppleton, Local 648, Pocatello, Idaho; Journeyman Mike Lewis, Local 648, Pocatello, Idaho; Journeyman Norm Willey, Local 648, Pocatello, Idaho. Top row, left to right are Journeyman Sherm Hawkes, Local 648, Pocatello, Idaho; Journeyman Mike Hoover, Local 648, Pocatello, Idaho; Journeyman John Van Scyoc, Local 44, Spokane, Washington; Journeyman Ernie Todakozie, Local 648, Pocatello, Idaho.





Journeyman Richard Drewniak,  
Local 296, Boise, Idaho

Apprentice Jeff  
Rigby, Local 648  
Pocatello, Idaho

Local 648 Business Manager Rod Fuger; Piping Supervisor Gary Weingar, Local  
290, Portland, Oregon; Steward Bryan Bowman, Local 648, Pocatello, Idaho

Journeyman Myron Miller, Local 350, Reno, Nevada;  
Foreman Brian Eaton, Local 648, Pocatello, Idaho;  
Journeyman Mike Johnson, Local 350, Reno, Nevada

manufactured our first batches of polysilicon. Importantly, this challenging, month-long commissioning process also allowed us to flex our operations team and validate our training, systems, and procedures. I am extremely proud of our team's accomplishment."

JH Kelly and Hoku prepared a detailed schedule and budget to be able to achieve commercial production in 2011. In order to maintain tighter control over the compressed schedule, the parties involved in the project agreed to set monthly milestones. JH Kelly was confident that its workforce could meet the monthly milestones in the final months of construction, putting its reactor demonstration bonus at risk

by stating it would only be paid if it met the monthly milestones.

"We ramped up our manpower from approximately 100 to well over 300 craftsmen since the end of July, and we look forward to maintaining a rapid pace to achieve the necessary milestones for plant start-up," said Mason Evans, president of JH Kelly.

"Hoku is very proud of the Pocatello polysilicon facility," stated Hoku President Mike Zhang. "We have invested over \$400 million in the project to date, and we will invest another \$300 million to complete the plant. It will create up to 250 high paying U.S. construction and manufacturing jobs, bolster the regional economy, add several million

dollars in needed state and local tax provide primary export products to help improve the balance of trade with China, and help advance clean energy manufacturing in the U.S."

Business Manager Rod Fuger concluded, "JH Kelly has continually complimented the UA for the productivity and craftsmanship on this project. I could not be any prouder of these U.S. members. Not only have the number of travelers that we have had on this project enhanced the finances of Local 6 we have had the opportunity to meet some of the finest people from across the United States."





Journeyman Phil Bower, Local 44,  
Spokane, Washington



Journeyman Bill Couron, Local 140,  
Salt Lake City, Utah



Journeyman Craig Sorensen,  
Local 140, Salt Lake City, Utah



Journeyman Tim Thorton, Local 192,  
Cheyenne, Wyoming



Journeyman Jeff Gregory, Local  
290, Portland, Oregon



Journeyman Marcus Hernandez,  
Local 648, Pocatello, Idaho



Journeyman Lazaro Torres, Local  
26, Western Washington



Apprentice Kip Lyon, Local 648,  
Pocatello, Idaho



Journeyman Steve Morrison, Local  
648, Pocatello, Idaho



General Foreman Ed Herron, Local  
648, Pocatello, Idaho



Journeyman Larry Robinson, Local  
459, Missoula, Montana



Apprentice Anthony Chavez, Local  
648, Pocatello, Idaho



Journeyman Louis Portor, Local 44,  
Spokane, Washington



Journeyman Perry Garbowski,  
Local 290, Portland, Oregon