

THE NUCLEAR NEWS INTERVIEW

## Kirk Newell: On the Rotational Engineer Program at Cook

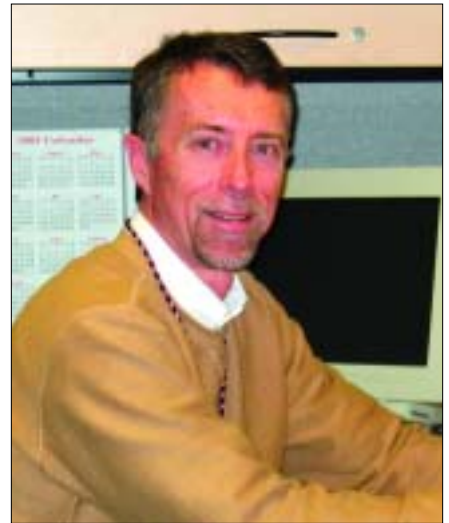
**K**irk Newell is engineering projects supervisor at American Electric Power's Cook nuclear

*A 12-month program helps young engineers to be better prepared for their permanent assignments.*

power plant. He is in charge of the Rotational Engineer Program, an initiative that brings young engineers to Cook to school them on plant operations before they begin their permanent assignments. The program was started in 2001 after management realized that hiring and retaining young engineers was a tough task. Cook had learned, as has the nuclear power industry, that its workforce was aging and the engineer-supply pipeline was drying up. The Rotational Engineer Program was seen as a way of attracting new engineers to Cook and making them want to stay.

The Cook plant, in Bridgman, Mich., has a pair of Westinghouse pressurized water reactors. Unit 1 is rated at 1020 MWe (net) and Unit 2 at 1090 MWe (net).

Newell, who has been at Cook for 18 years, shared his thoughts about the Rotational Engineer Program and why it is working to help Cook retain young engineers. The interview was conducted by Rick Michal, *NN* senior associate editor.



**Newell:** The program helps new engineers develop friendships, which promotes a rewarding social and professional life.

*What is Cook's Rotational Engineer Program?*

The program was started in 2001. It was developed to improve our ability to hire and retain talented young engineers and better prepare them for their permanent assignments. By participating in the program, an engineer becomes familiar with the plant's organization and operation. An understanding of the roles and responsibilities of the various departments and personnel at the plant is gained prior to being assigned a permanent position. When the engineers begin working in their permanent positions, they better understand their individual roles and have developed stronger working relationships with plant personnel. We expect new engineers to function more effectively, improving both their chances for success and their job satisfaction.

The program also helps new engineers develop friendships, which we feel promotes a rewarding social and professional life. Engineers entering the program are hired in a group. They attend training and

other functions as a group, and travel together on business-related trips. The program supervisor arranges for a variety of activities where engineers interact with other Cook personnel. The camaraderie enjoyed as a result of these interactions extends beyond their rotational assignments. A new employee will not feel isolated after moving to the area.

*How long does each group participate in the program?*

The program varies in length lasting about 12 months, based on plant activities scheduled for a given year. The order of rotational assignments can also vary significantly based on the plant schedule.

*How many new hires go through the program at any one time?*

Typically, four to six new engineers are hired into the program at a time.

*What happens during the 12 months of the program?*

Initial orientation lasts about one month, which includes general employee training. Following that, the engineers are given about two weeks to self-study plant procedures and are taken on tours to become familiar with Cook. After completing the self-study, the engineers participate in a one-week system overview class to gain a general understanding of plant operation. During this time, each engineer is assigned a mentor and they will meet with their mentors on a monthly basis.

After completing initial orientation, rotational assignments begin. While the visits are mainly for familiarization and training, engineers are usually given tasks to perform during their assignments to become familiar with the responsibilities of each organization. The length of the visits can vary from a couple of days to over a month, depending on organizational and plant activities in progress at the time. For example, an engineer may spend only two or three days in Performance Assurance, but they may spend 35 to 40 days in Operations or Maintenance

during a refueling outage. During their rotational assignment, engineers will visit virtually all plant departments.

The engineers also receive comprehensive training on plant systems and fundamentals, lasting about seven weeks. This is in addition to the one-week system overview class that is part of the initial orientation.

*What about extracurricular activities that are planned?*

The program supervisor arranges for a variety of functions. Some of these might include members of the ongoing class and also members of the previous class, summer interns, and other Cook staff. We have had quarterly dinners and monthly lunches for the class. Other events for the 2003 engineers included a bowling night, dance night, whitewater rafting, rock climbing, softball/picnic, and volleyball.

The engineers also travel to a number of AEP facilities, including a coal plant, a mining site, corporate headquarters, and the central machine shop.

If the opportunity arises, the engineers also will be sent to industry-related seminars or functions. Members of the 2003 class, for example, traveled to a Young Engineer's Conference in Santa Monica, Calif., Women in Nuclear Conference in Las Vegas, and the Yucca Mountain storage facility in Nevada.

*What outcome do you expect from the program?*

Past participants in the program have developed strong friendships and solid ties to the community. It helps to ensure that new engineers not only have a positive professional experience, but a positive personal one as well. This greatly increases our chances of hiring and retaining talented young engineers at Cook.

*How were things done at Cook before this program was started?*

Before, while we could bring young engineers in, our retention rate was low. There was a concern that we needed to do something to improve retention. This has been a concern not only in the nuclear industry but across technical industries. Looking to the future, industries are seeing a shortage of incoming engineers as many baby-boomers retire. That problem is particularly applicable to the nuclear power industry. We have an aging work force, and a high percentage of our people at Cook are in their 40s and above. So, we knew we had to hire young engineers, but that it was becoming increasingly tougher to do so.

*Before the start of the program, were younger engineers employed there leaving Cook to work at other nuclear plants or were they leaving the industry completely?*

I would say they were leaving the industry. My understanding is that many nuclear utilities have had the same experience.

*How has Cook done in retaining engineers who were members of the program's inaugural class?*

It's still early, but all the people from the 2001–2002 class are still with us. We have yet to see how it will be for the long term.

One factor I haven't yet mentioned is that nuclear power isn't recognized at colleges and universities as a growth industry. So, this presents an even a greater challenge. This program not only helps retention, but it will help us get talented individuals in here in the face of perceived non-growth.

*What types of engineers are you hiring at Cook?*

We hire a variety of engineers based on need at the plant. But the bulk of the new hires are mechanical engineers, electrical engineers, nuclear engineers, materials science engineers, civil structural engineers, and an occasional chemical engineer.

*Could you describe the actual rotations?*

There are the "big hitters," where the engineers will spend most of their time—Engineering, Operations, and Maintenance. For Engineering, the engineers will spend time both in plant engineering and in design

engineering. In fact, they'll experience a number of the various sections throughout Engineering, including Systems, Programs, and Production.

**“[E]ngineers ... receive comprehensive training on plant systems and fundamentals, lasting about seven weeks. This is in addition to the one-week system overview class that is part of the initial orientation.”**

They will also rotate through support groups, but for a shorter time, perhaps only a week or so. These groups include corrective actions, performance assurance, training, materials, and all the other support groups on site. We try to get the engineers in every department and most groups for at least a short time during the 12-month period.

*Could you talk about specific training the engineers experience during rotations?*

These are more tasks than training. In Operations, for instance, during a refueling outage they were on either the primary or secondary teams, working with operators on evolutions to support the outage. In Maintenance, they would be given work packages for review to look for omissions or errors. They would then get those issues addressed before the packages were submitted to our records center. They also might work with our people in charge of clearances, to make sure that as we completed work, we were adjusting the clearances as appropriate to allow the equipment to return to service.

In Engineering, they would work under the supervision of a qualified engineer. Their tasks would include things like performing calculations or doing research for a modification.

*Were these young engineers hired for specific jobs or, following their rotation, were they allowed to pick the area where they wanted to work?*

We recently made a change in that process. The first two years of the program, starting in 2001, engineers we hired for the rotational experience could choose the spot where they wanted to go. Most ended up in Engineering, but some did go to other sections, such as Operations and Environmental.

Now, due to a recent change, we select a

permanent position for each engineer. While they'll still experience all the other groups to develop working relationships and learn how the plant operates, at the end of the rotation they will report to the department for which they were hired.

*Why was that change made?*

We had a change in philosophy. We feel it's the best use of personnel and the best way to run the program.

*Could you explain the role of mentors in the Rotational Engineer Program?*

When the engineers are hired, one of the first things we do during introductory training is to identify mentors. We typically set up a dinner at which the engineers meet their mentors and get to know them. The mentors are typically individuals who are directors all the way up through the senior vice president, but they also can come from other positions throughout the plant. The mentors are there, in an informal setting, to help the engineers in their career paths.

*How important to the program are the extracurricular activities?*

We feel that if we want to keep people here for a long time, we have to provide opportunity for both professional and personal satisfaction. It won't matter how much they enjoy the job if they don't have friends and don't feel like a part of the community. If they feel isolated, we know we will lose them. In order to help in the area of personal satisfaction, a number of team-building activities have been set up, such as bowling and ballroom dancing. Some of the activities are paid for by the company, while others are organized and paid for by the participants. One such activity was whitewater rafting in West Virginia. Everyone who went on that trip paid for it out of their own pockets. On that trip, we had good representation throughout the Engineering department, including long-time engineering staff, interns, and the rotational engineers.

Another activity that was well received was ballroom dancing. We had the interns together with the rotational engineers and

some plant staff. Although there was some hemming and hawing, by the end everyone was enjoying it. The folks had a great time getting out there dancing and getting to know each other.

These activities are ways to get people interacting so that an engineer who just graduated from North Carolina State University doesn't come to southwest Michigan without an avenue to meet people and do things. This helps to put people together in an environment where they will naturally get to know each other and interact.

*How many new engineers have been through the program?*

Since its inception in 2001, a total of 16 engineers have been put through the program. The most recent group had their "graduation" ceremony on December 17, 2003, and they started their permanent assignments in January. The next rotational program for incoming engineers is scheduled for some time this year.

*At the end of the program, do you have a feedback mechanism so the engineers can critique it?*

Yes, we do. We get feedback from the engineers at the end of the rotation on how we might revise the program. Another thing we've added—and I did this with a previous class, in mid-2003—is that I met with the engineers to get feedback after they were in their permanent positions for about eight months. I asked them if they had recommendations on improving the programs based on what they've learned since they took their permanent positions.

*Has this program affected the overall plant budget?*

**“There are the ‘big hitters,’ where the engineers will spend most of their time—Engineering, Operations, and Maintenance.”**

It has a very minor impact. These salaries are for positions we would normally hire. Obviously, there is an impact on a budget every time you bring someone new in, but the rotational program has not resulted in extra staff or much additional spending. The funds to operate and maintain the program are small, and I would say that it has little impact on the overall plant budget. In the long term, it should have a positive impact on the budget by encouraging retention, thus reducing costs associated with turnover. **■**