A few opinions, almost completely in agreement

We asked whether you'd prefer to work on the operation of an existing reactor or on the development of a new one. Responses were few, but those we received offer some insights.

IN THE NUCLEAR Notes column in the May 2007 issue of *Nuclear News* (page 4), an informal request was made to the readership. The general subject of the editorial was whether planning for new reactors would distract licensees from operating the reactors they already have at the high level that has been maintained since the turn of the millennium. The request was for readers to let us know what they would rather work on: the design, construction, and startup of new reactors, or the continued operation of reactors that have been in service for a long time.

The idea was to see if the industry will be facing an even bigger problem than the one that already exists, with much of the experienced labor force approaching retirement and more recently hired plant personnel lacking the same firsthand knowledge of reactor operation. (Ironically, the often troublesome events of the 1980s are credited with having built the skills later used by plant personnel to achieve the stellar performance of today. Licensees hope that "knowledge capture" can be used to pass along those skills to the new generation, without the same shortfall in performance.)

We had a hunch that given the choice, nuclear power professionals in general would be more eager to work on new reactors than to keep old reactors running. Whether that is in fact true remains for a much larger, statistically rigorous survey to determine, because our "survey" drew only six replies. Even so, the results might persuade someone else (with money) to carry out such a survey, because our aging fleet of operating reactors might soon have trouble competing for the best and brightest nuclear professionals.

Readers were given three options: to work on new reactors, to work on existing reactors, or to be rotated from one to the other. Four of the six stated a preference for new reactors only. The other two opted for rotating from new to old and back. Not one of the six expressed a desire to work only on reactors already in operation.

Readers were also encouraged to describe where they are in their careers, with the assurance that no names or company affiliations would be printed. These details may offer some insight. An electrical design engineer with nearly 30 years of experience had this to say:

> I was involved with implementing a number of the many regulations to "hit the books" after Three Mile Island. The challenges and issues to be resolved, both technical and regulatory, were broad and diverse. At times it seemed that the issues and problems would never end. The amount of work was tremendous. It became obvious to me by the early 1990s that this new technology (i.e., nuclear power) was introduced for mass consumption a little ahead of its time. This first generation of plants had many inherent design and operating flaws, many of them now fixed. However, a number of "big ticket" design and operating flaws still exist that can/will never be fixed and that continue to nag the industry today despite the continued increase in capacity the fleet has experienced since the mid-1990s. I believe we're just getting better at managing these remaining flaws.

He then addressed the trend toward reduced staffing levels, warning, "The work isn't going away as fast as the bodies," and adding that the remaining veteran staffers are working more hours even as they look forward to more free time as they approach retirement. He concluded:

> Bottom line: I'm tired of working on operating plants. There's very little notoriety for a technical job well done or a problem solved. It's all about capacity factor and $$$. I'd like to work on something new for the remainder of my time in this industry.

A 30-year-old senior reactor operator with a master's degree in nuclear engineering—essentially at the other end of the career duration spectrum from the respondent above—had this to say:

> The prospect of developing a new reactor is exhilarating. To take a plant from the concept stage and see it all the way through to producing the first megawatt of electricity would be very satisfying, and due to my age, something I could likely see all the way through. . . . The endeavor of building a nuclear plant and taking it from beginning to end is the type of challenge that I am looking forward to undertaking in the next 10 years.

Another veteran responded as follows:

> As one who has worked on both new plants and old, I preferred the new plants. There was a special excitement about bringing new technology to the fore. While there have been interesting moments with the operating plants, I admit to being wistful about my time in startup.

The other person who stated a clear preference for new reactors—someone with 29 years of experience in the industry—tempered that position with a reality check:

> Realistically, other factors will weigh heavily and, in combination, may supersede the choice between a new vs. existing plant. Such factors vary with the individual and include compensation, location, family, other people involved, and specific job content. And the older we get (certainly an issue when comparing nuclear workforce ages now and during the previous startup era), the more important these other factors often become.

A supervisor at a plant in the Midwest—one that has not, so far, been announced as a potential site for a new reactor—said he wished he worked at a site where a new reactor was being planned so that he could work on both (this was taken, in our survey, as a preference for working on both new and old reactors). He warned of this scenario: "When these new plants start coming on line, lucrative offers are going to be made to our young people as well. Like maybe our just newly licensed SROs with two years of experience, or maintenance supervisors, and many will go."

He added his belief that utility management should be less insistent on degreed engineers and open some of the positions usually filled by engineers to enlisted personnel from the nuclear Navy, without degrees.

The sixth respondent, a contractor/consultant, stated plainly a preference to alternate between new and operating reactors. He took the following view:

> For any so-called "renaissance" of the nuclear power industry to be successful, lessons learned from the existing, well-established programs must be applied to the licensing, construction, and operation of the next generation of reactors. While separate accountability for each effort is important, communication between the two efforts is essential.

And so there may be, on the horizon, a dilemma for licensees looking to add new reactors while operating old ones: If the best and the brightest flock to the new reactors, how do you keep the old units running in top form? And if you try to restrict mobility from the old to the new, do you run the risk of alienating the elite professionals you clearly need?

It may help to recall that things could be worse—and already have been. In the 1980s and 1990s, utilities faced a different personnel problem: Some people, seeing what appeared to be a downward spiral in the progress of nuclear energy (dozens of reactors canceled, no new orders placed), simply left the field completely. This time, at least, the competition for the prime personnel appears to be staying within the nuclear community.—*E. Michael Blake* NN

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