

## UTILITY WORKING CONFERENCE

### More space, more session tracks at new venue

**T**HE UTILITY WORKING Conference and Vendor Technology Expo (UWC), convened annually by the American Nuclear Society's Operations and Power Division, was held August 14–17 at the Westin Diplomat Hotel in Hollywood, Fla., ending a long run at the Amelia Island Plantation resort north of Jacksonville. It had been evident for some time that the UWC had outgrown the old venue, which offered a relaxed beachfront setting with buildings scattered through lush groves and connected by cart paths. By contrast, the Diplomat is in an urban setting (high-rises stacked along the beach on an island between the intracoastal waterway and the Atlantic Ocean, in a city that borders Miami and Fort Lauderdale), with the entire UWC under one roof, the entire exhibit in a single room, and the entire attendance able to be seated in one room for plenary sessions and other all-hands functions.

Since it began in 1994, the UWC has been intended as an event for plant personnel, regulators, and on-site contractors to share information on the operation and upkeep of power reactors. The Vendor Technology Expo (hereinafter referred to as the exhibit) gives providers of products and services an opportunity to contact potential buyers, thanks in no small part to the scheduling of meals, receptions, and snack breaks in the exhibit hall. Attendance has grown in recent years, with vendors and consultants, who are looking to mingle with potential customers, accounting for much of the increase. There has been far less growth in the attendance of plant personnel, who provide the knowledge and experience shared in breakout sessions and are (willingly or otherwise) the potential customers at the exhibit.

There were 749 attendees who registered in advance for the meeting, up nearly 25 percent from the 600 who did so for the 2010 UWC, plus advance registrations for 101 exhibiting organizations, also an increase of about one-quarter from 2010. Ad-

*The move from the northern end of Florida to nearly the southern tip provided more options for organizers and attendees, but day-to-day concerns at operating plants may have drawn less interest than new reactors—even small modular ones.*

vance registration of utility personnel, however, was anywhere from 137 to 167, compared with 147 in 2010. The uncertainty in the actual number is the result of Exelon Generation, owner of the nation's largest nuclear fleet, registering as both a vendor and a utility. The company now offers its services to other utilities as Exelon Nuclear Partners, which had a booth in the exhibit. Even if one were to assume that all of the Exelon preregistrants were there as utility personnel and not as vendors, the total utility increase would be less than 14 percent. In any case, from an exhibitor's standpoint, the UWC appears to be bringing in more new competitors than new customers.

The growth of the exhibit may reflect the fact that license renewal has become either a reality or an expectation for probably every one of the 104 power reactors now in operation, which means that personnel at all of those reactors foresee decades more of operation and thus a continuing need for the products and services vendors have to offer. There is also, however, an air of excitement in the nuclear industry over new reactor licensing and small modular reactor (SMR) development. Some of the excitement dimmed after the Fukushima Daiichi accident in March, but with each passing month, events have shown that the most advanced and most committed new reactor projects are continuing to progress. Meanwhile, new SMR designs continue to emerge and attract attention. The breakout sessions in the New Reactor track, which included two sessions devoted to SMRs, may have been the most heavily attended breakouts at the UWC.

This reporter wonders, however, whether new-reactor enthusiasm fits in with the UWC's original mission. Not only do no new reactors yet exist, even as full-fledged construction projects, but only 13 utilities are involved in them (and only one, the Tennessee Valley Authority [TVA], has made public a project to deploy SMRs). Meanwhile, the operators of the 104 power reactors can always benefit from new input on how to sustain fleet-wide capacity factors of about 90 percent as their original equipment approaches or passes the 40-year mark.

The move to the Diplomat provided not only larger spaces but more of them, and the organizers took the opportunity to add four new session tracks: Cyber Security/Digital Instrumentation and Controls; Long-Term Operation; Maintenance; and Risk Management. Coverage of the Maintenance track is provided in an article on page 81, in this issue's Special Section on Nuclear Power Plant Maintenance.

#### Rowe's valedictory

Each year the planning of the UWC is overseen by a different utility, and for 2011 this role was filled by Exelon Generation. The heavy involvement of Exelon and its personnel in the meeting—including, as noted earlier, the presence of Exelon Nuclear Partners in the exhibit—carried over into the program. The first keynote address came from John Rowe, who is soon to retire as chairman and chief executive officer of Exelon. He titled his talk "My Last Nuclear Speech." His spoken remarks differed somewhat from the prepared text that was

made public by Exelon (and which drew extensive commentary from Internet observers, including pronuclear advocates), but the general tenor was the same in both versions.

Rowe declared himself to have been a proponent of nuclear power throughout his career, dating back roughly 40 years to when he was an outside attorney for Commonwealth Edison Company (a forerunner



Rowe

of Exelon), working on the licensing of Dresden-2 and -3. "I am a nuke," he stated, but he added that any interest in nuclear power must be "harnessed to facts." (His resumé also includes involvement with utilities that decided, among other

things, to cut investment in the Seabrook power reactor during construction—it has now operated for more than 20 years—and to accept the closure of the Maine Yankee power reactor with about 15 years left on its original license.) He expressed little confidence in the near-term prospects for new power reactor construction in the United States, coming back repeatedly to his conviction that the price of natural gas will remain close to its current level (below \$5/million Btu) for at least 10 years and perhaps 20—a level against which new nuclear generation cannot compete economically.

He also said that electricity demand growth had dipped along with the economy, and he projected that it would not return to the level of 2007–2008 until roughly 2013 to 2015. He gave four preconditions for new nuclear power in the United States, only one of which he believes has been met: the arrival of new reactor technologies. Rowe said that without the other three requirements—a solution to high-level nuclear waste disposal, a need for new generation, and either higher prices or reduced availability of natural gas—he does not expect much progress for new nuclear.

(During Rowe's tenure as CEO of Exelon, he and other company officials stated often that Exelon would not seek to build new nuclear capacity until there was a clear resolution of the HLW issue, but in 2008 the company followed the trend of the other large fleet operators by applying to license new reactors. This project, to be sited in Texas, where Exelon has no current nuclear operations, was later scaled back, and an application for an early site permit is now in the technical review process at the Nuclear Regulatory Commission.)

Rowe also declared that in the aftermath of the Fukushima Daiichi accident, polls have shown that public support for nuclear power has declined "something like 20 percent." (The prepared text cited "nearly a 20-

point drop," which is not necessarily the same thing; a 20 percent drop from 60 percent would be a decrease of 12 points, to 48 percent, while a 20-point drop would be to 40 percent. In major polls carried out in late March, the largest decline was 13 points, from 52 to 39; this can be interpreted as a 25 percent drop in that poll.)

Based on data included in bar charts that he used in his presentation, Rowe said that Exelon has concluded that because of changes in conditions from 2008 to 2010, new nuclear would break even only with a carbon tax of \$100 per metric ton, which is comparable to the range for wind power (with solar not even close to being worth-

while economically). The company, Rowe said, has decided that the cheapest option is the retirement of old coal plants, and that most energy efficiency initiatives and power reactor uprates "remain attractive."

He stated that the United States is now the second-largest producer of natural gas after the Middle East, and that this will keep prices low for a long time. While there are environmental concerns over the "fracking" process for extracting gas from shale, he said that Exelon agrees with others that while additional regulations would increase the price, they "will not destroy the cost." Low gas prices and reduced electricity demand resulting from the economic slow-

down in much of the world “have dramatic impacts on the need and costs of building any new generation.”

The closest Rowe came to a positive nuclear message was a statement of high regard for nuclear professionals. He said that he thinks the odds of a nuclear renaissance are “about five to four against,” but he told his audience that the nuclear field remains “a career choice for bright, talented people.” He noted that his analysis of nuclear power’s prospects is not the only one, and that there are “equally informed and reasonable” forecasts indicating many worthwhile opportunities for new nuclear power. “I have every confidence that each of you is tough enough to make it regardless of what the future holds for new nuclear.”

When the floor was opened to questions from the audience, Rowe was asked about spent fuel reprocessing. He said flatly that nobody would pay for it, that there is little short-term demand and insufficient assurance of nonproliferation, and that it would not change the need for HLW disposal. Asked about public-private partnerships to boost new nuclear, he said that the private side is always the junior partner. He also noted that while utility executives may be politically conservative, they still yearn for government support. He argued that one can believe in markets or in mandates, but not in both at once.

Asked when there could be decisions on seeking license renewals out to 80 years of service, Rowe said that this could depend on the Fukushima aftermath, adding that Exelon’s Dresden and Quad Cities reactors (boiling water reactors with Mark I containments, like the damaged reactors at Fukushima) seem “more than a year older today than they were a year ago.” While he was not challenged on Exelon’s plan to close Oyster Creek in 2019, only halfway through the term of its renewed license, Rowe brought it up himself in response to a question about Entergy’s Vermont Yankee plant. Rowe said that Exelon believes that three-quarters of the remaining value of

actors at a single site, and the issue of several reactors at one site has become thornier because of what happened at Fukushima.

### Other general sessions

Speaking at the Tuesday plenary session was James O. Ellis, president and CEO of the Institute of Nuclear Power Operations (INPO). As was the case with so many other presentations at the UWC, Ellis’s talk had the perspective of the aftermath of Fukushima Daiichi, although the speech was mainly about the creation of INPO after the accident at Three Mile Island-2. He said that an INPO team has been gathering data and providing advice at Tokyo Electric Power Company (the operator of Fukushima Daiichi) since March 18.

Ellis stressed the importance to the nuclear community of the response after Three Mile Island—not only the formation of INPO and its accomplishments in helping reactor owners improve safety and performance, but the development of a culture in which such improvements became possible. He said that a similar response is needed again, after Fukushima (hence the title of his speech, “Once Again . . . Let’s Do the



Ellis

Right Thing”). This time, he said, the focus may be more on an organization in which INPO participates, the World Association of Nuclear Operators (WANO), which was created in 1989 following another power reactor accident, at Chernobyl-4 in what is now Ukraine.

Ellis noted that despite the overlap between INPO in the United States and WANO worldwide, WANO is much more limited than INPO in what it can do. That, he explained, is because in order to gain the participation of every power reactor owner, WANO could go only as far as the least eager of those owners was willing to go. Since

Fukushima, he said, many WANO members (and the organization itself) are looking at ways to make WANO more like INPO, with its extensive access to reactor data and personnel and its influence over owner be-

havior through its uncompromising (and confidential) plant performance assessments.

During the question-and-answer period, Ellis was asked what missions WANO should take on. He noted that WANO has unique challenges and will make its own decisions, but he added that he thinks

WANO should stop using cultural differences as an excuse to let some owners and countries continue to operate as they always have. Ellis said that the culture of nuclear safety should be universal. Another attendee posed the question that if WANO becomes more like INPO, should the International Atomic Energy Agency become more like the U.S. NRC? Ellis noted that President Eisenhower, in his Atoms for Peace program, had wanted the IAEA to have more influence over nuclear programs than it ultimately was given, and national sovereignty limits the authority that the IAEA can exert in any country, member or non-member. Ellis said, however, that he thinks there can be “a confluence of standards” across national borders. INPO is learning from the post-Fukushima “stress tests” being conducted at European power reactors, he said, but most of the IAEA’s budget concerns nonproliferation, and only 8 percent is for reactor safety. As such, Ellis said, there is not a high probability of the IAEA’s setting up a formal structure to regulate power reactors.

Like most nuclear gatherings since this spring, the UWC devoted general-session time to the Fukushima Daiichi accident. The presentations, however, did not include reports from Japanese participants or observers on the status of the recovery work. Rather, the reports focused mainly on the response to the accident within the nuclear community in the United States. These presentations were delivered on Wednesday afternoon, at the end of the meeting.

Amir Shahkarami, CEO of Exelon Nuclear



Shahkarami

Partners and general chair of the UWC, spoke on the ANS Special Committee on Fukushima, of which he is a member. The purpose of the committee, he said, is to “pro- vide a clear and concise explanation of the events surrounding the accident to the general public and U.S. leaders.” This mission will be ongoing for some time.

While it is often said that a nuclear accident anywhere is an accident everywhere, affecting all nuclear power programs regardless of their actual involvement, Shahkarami stated his view that not every nuclear program is necessarily a hostage to all other programs worldwide. Thus far, some countries (such as Germany and Switzerland) have taken steps that could close out their nuclear power involvement altogether, but others, including the United Kingdom and the United States, are still taking steps toward building new power reactors.

Shahkarami’s last slide contained what he said were the contents of an e-mail he had received, not endorsed by the ANS

## Many WANO members (and the organization itself) are looking at ways to make WANO more like INPO.

Oyster Creek would be realized within the first 10 years of the renewal.

In response to a question on whether SMRs might add to the prospects for new nuclear in the near term, Rowe said that he was not convinced that they would. In his view, the economics would still favor the purchase and construction of multiple re-

committee or necessarily by Shahkarami himself, but in presenting it, he asked (perhaps rhetorically) whether it should be included in the general post-Fukushima discussion. Shahkarami did not disclose the author of the e-mail; the message questioned whether the light-water reactor (LWR) community was being unfairly criticized and penalized because of Fukushima, whether expensive and unnecessary upgrade requirements are in the offing, and whether nuclear organizations are willing to resist them. Shahkarami titled this slide “Time to be assertive.”

There was some overlap in the presentations, with two of them having the phrase “the way forward” in their titles, and the Nuclear Energy Institute (NEI) noting INPO directives to U.S. reactors, while INPO delivered information on work at Fukushima Daiichi itself. (*Nuclear News* currently has a policy of not repeating in meeting coverage information on Fukushima Daiichi that has already been covered, and sometimes superseded, in news reportage in this and earlier issues of the magazine; the most recent information can generally be found in the International or Late News sections of the latest issue.)

Tony Pietrangelo, senior vice president and chief nuclear officer of NEI, said that the immediate response of the U.S. industry included the INPO directives mentioned above, referred to as incident event reports. Power reactor owners were required to take actions to verify that all critical safety components, procedures, and staffing are in place to mitigate potential damage from earthquakes, floods, large fires, and explosions; to add backup cooling water sources



Pietrangelo

and additional water level monitoring for spent fuel pools; to assess the effectiveness of operator fundamentals and training; and to assess the ability to maintain safety systems if all AC power is lost for 24 hours. On the same day as this presentation (August 17), NEI noted these directives in a press release, along with three others: to evaluate emergency operation guidelines, to complete a detailed evaluation of the Fukushima Daiichi accident so that the facts of the event and the responses to it are understood, and to evaluate regional staging of equipment and supplies available to any nuclear facility operator to provide a centralized rapid-response capability.

Martin Virgilio, the NRC’s deputy executive director for reactor and preparedness programs, summarized the agency’s response to the accident. The most significant recent development was the issuance in July of the report from the NRC’s Near-Term Task Force on the accident and lessons to be learned from it, and much of Virgilio’s presentation was on this report and its recommendations. (See *NN*, Sept. 2011, p. 27, for detailed coverage of the task force re-

## INPO is looking at having licensees ensure that they can cope with a loss of off-site power for at least 24 hours.

port, and also page 63 of that issue for what the commissioners then assigned the staff to do to explore the issues further.) He then stated that he believes that the commissioners will set up a steering committee made up of the directors of various NRC offices (including some not directly involved with reactors) and also a panel of external stakeholders.



Virgilio

Virgilio said that there could be an advance notice of proposed rulemaking on station blackout, noting also that INPO is looking at having licensees ensure that they can cope with a loss of off-site power for at least 24 hours. He said that he also expects actions to revisit current requirements in seismic and flooding vulnerability, mitigation of the effects of fire and explosions on large plant areas, hardened containment vents, and the consolidation of industry-developed severe accident management guidelines and NRC-regulated extreme damage mitigation guidelines and emergency operating procedures. Virgilio added that all of this activity, in an agency with constraints on its budget and resources, probably means that the NRC will proceed more slowly on tasks that the industry wants done, such as the processing of applications for license renewals and power updates.

For the final keynote speaker on Wednesday morning, UWC organizers reached entirely outside the nuclear realm by inviting Charles J. Camarda, senior advisor for innovation to the Office of Chief Engineer at the National Aeronautics and Space Administration’s Johnson Space Center (and a former astronaut). He had been invited before the Fukushima Daiichi accident occurred, but in the aftermath, the organizers

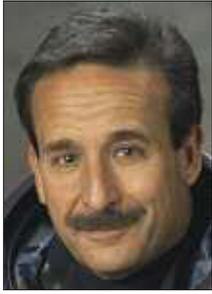


Photo: NASA

Camarda

decided that it would be especially appropriate for Camarda to relate his experience with the space shuttle program, especially in response to the *Challenger* and *Columbia* accidents. If the organizers' intent, however, was that Camarda could show how the resumption of shuttle flights after the two tragedies could be an example for the nuclear community after Fukushima, what he presented may have been an example of what not to do. Camarda remains critical of the agency's response to the *Columbia* incident, in which the cause was traced to damage to the leading edge of the shuttle's left wing from the impact of insulating foam that separated from the booster rockets during the launch.

Camarda said that NASA was too slow to accept that foam separation was a potentially fatal problem for every shuttle flight. Asked later by an attendee whether it was appropriate to retire the shuttle (the final flight had recently taken place), Camarda said that he thought it was time for that to be done. In his view, the wings' leading edges still posed a problem: 12 panels on the edges of the shuttle fleet's wings had to be changed out.

### New reactors, including SMRs

Despite what I wrote earlier, questioning the pertinence to this meeting of new reactor licensing, there can nonetheless be news value in any technical session on new reactors. As noted earlier, the breakout sessions on new reactors were heavily attended, indicating that despite the fact that few utilities are involved in new reactors (and even fewer in SMRs), new reactors apparently interest meeting attendees whether the subject is relevant to their current job description or not. Thus, here is a distillation of presentations in the New Reactors track.

Because the first projects are getting close to license issuance, a great deal of attention is now being paid to inspections, tests, analyses, and acceptance criteria (ITAAC), which are to be carried out by a licensee be-

tween the receipt of a combined construction and operating license (COL) and the NRC's permission to load fuel and begin power operation, and the Construction Reactor Oversight Process (cROP), the construction-related counterpart to the process that the NRC has used since 2000 in

the regulation of operating reactors. The NRC, license applicants, and the industry in general (through NEI) have been jointly preparing for ITAAC and cROP for the past two years, and they will be tried out on a pilot basis at Southern Nuclear Operating Company's Vogtle-3 and -4 project, which is in line to receive the first COLs, perhaps in February.

From the NRC's standpoint, ITAAC and cROP come under the larger heading of construction inspection, which also includes vendor inspections because of the modular assembly processes called for in the new reactor designs. The NRC is responsible for verifying that ITAAC issues



Dudes

are closed and their requirements satisfied. Laura Dudes, director of the Division of Construction Inspection and Operational Programs in the NRC's Office of New Reactors, said that the guidance for industry ITAAC closure has been expanded to aid in the verification of closure by the NRC. She also stated that rigorous vendor oversight is crucial to ensuring the integrity of the supply chain, and more generally to ensuring reactor safety.

Chuck Pierce, the AP1000 licensing manager at Southern Nuclear, has been involved in the progress of the Vogtle-3 and -4 project, which is now waiting for the NRC to finish the certification of the AP1000 design, conduct the mandatory hearing, and issue the COLs. Among the lessons he has learned, he said, are the need to define clearly the relationship between Southern Nuclear and all of its contractors, with the owner holding the final responsibility; to maintain the licensing and design bases at all stages of the project; and to develop a robust corrective action program. He said that a single corrective action pro-

**Rigorous vendor oversight is crucial to ensuring the integrity of the supply chain, and more generally to ensuring reactor safety.**

gram for the entire project is probably best, because contractors arrive with their own programs, and these must be integrated for trending and ITAAC management.

Tom Houghton, director of safety-focused regulation at NEI, presented a flow-chart showing the intricate relationship of

actions within the cROP. The NRC will conduct four kinds of inspections of construction projects: reactive, vendor, program, and ITAAC-related. The evaluations of these inspections, and the licensee's ITAAC closeout submittals, will then be used by the NRC to verify ITAAC closure.



Houghton

Moorman

The NRC's Center for Construction Inspection is based at the agency's Region II

## The NRC will conduct four kinds of inspections of construction projects: reactive, vendor, program, and ITAAC-related.

Office in Atlanta. Jim Moorman, director of the center's Division of Construction Projects, said that current "challenge areas" for the NRC include the extent to which licensees maintain oversight of vendors; the dedication of commercial-grade parts, equipment, and materials for nuclear-grade use; and design control and configuration management, which includes correctly translating codes and standards into design documents.

Moorman showed the ITAAC document for the waterproof membrane to be used under each nuclear island basemat at Vogtle. The design commitment is for a friction coefficient to resist sliding of 0.7 or greater. Under the heading Inspections, Tests, and Analyses, the document states that the mudmat-waterproofing-mudmat interface will be tested to confirm that the coefficient is sufficient, and under Acceptance Criteria, that a report exists to document that an acceptable coefficient has been demonstrated through material qualification tests. (The waterproof membrane ITAAC is one of three that have been carried out at Vogtle under the site's limited work authorization [LWA]; the testing on the membrane has been completed.)

More than one speaker called attention to the fact that ITAACs do not occur at a steady pace during construction, partly because tasks are completed at different rates and different times during the project. Russ Bell, NEI's director of new reactors, showed that the number of ITAAC closure

letters is expected to peak at more than 300 per year at about the three-year mark in construction for an AP1000, and for twin reactors paced about a year apart, the peak is expected to be more than 600 per year at roughly the three-and-a-half-year mark. Bell said that NEI is working with the NRC in a number of areas on ITAAC, including an effort to mitigate this "surge."



Bell

Randy Johnson, Southern Nuclear's vice president for quality and compliance on Vogtle-3 and -4, assessed ITAAC readiness and lessons learned from the LWA. He said that the engineering reports used to closeout ITAAC need to be clarified; that closure, related to as-built conditions, should be clear in the performance and documentation plans; that closure package documentation should include corrective action reports and non-conformances; and that Southern Nuclear will increase its oversight, partici-

pating in vendor qualification audits by the reactor vendor (Westinghouse) and the engineering/procurement/construction contractor (the Shaw Group).

David Matthews, director of the Division of New Reactor Licensing in the NRC's Office of New Reactors, added to his most recent presentation on lessons learned (*NW*, Sept. 2011, p. 50). He repeated that some applicants have used analytical methods that are too simple (for example, lumped mass, rather than finite-element), but added that there is a



Matthews

potential for common-cause failure in digital instrumentation and controls, and that issues related to potential sump strainer blockage include fiber debris bypass amount, uncertainty evaluation for fuel assembly head loss measurement, and localized fuel pin heat transfer analysis. He also noted that challenges in the construction phase include maintaining the de-

sign basis after the issuance of exemptions and amendments.

Mark McBurnett, senior vice president of Nuclear Innovation North America (NINA), recounted his company's progress to date with the COL application for South Texas-3 and -4. (NINA is continuing to pursue the COL despite the fact that NINA's majority owner, NRG Energy, has stated that it intends to spend no more of its own money on the project.)



McBurnett

Among other things, he said that the involvement of the U.S. Army Corps of Engineers (USACE) in the environmental review merits close attention from applicants. He said that the USACE's position has changed from not needing to issue its own permit to requiring the permit, which could not be issued until after the final environmental impact statement. McBurnett advised that the USACE is not a monolithic agency and that its regional offices are largely autonomous and make their own decisions.

Douglas J. Rosinski, an attorney with the firm of Ogletree Deakins, looked at whether the 10 CFR Part 52 licensing process now being used for large LWR certification and licensing is suitable for SMRs. He noted that TVA's Clinch River project is aimed toward a traditional 10 CFR Part 50 application for a construction permit, then a 10CFR52 certification application by reactor vendor Babcock & Wilcox, and then an operating license application from TVA. In

## Apart from major industry firms such as B&W and Westinghouse, most of the organizations developing SMR designs are not rich.

addition, Rosinski noted that apart from major industry firms such as B&W and Westinghouse, most of the organizations developing SMR designs are not rich, and a great deal of money is needed to apply for design certification and then respond to the NRC's requests for additional information, of which there could be thousands.

Catherine Haney, director of the NRC's Office of Nuclear Materials Safety and Safeguards, advised SMR developers and customers to address fuel cycle issues, along with their regulatory implications, early in the development process. Haney was later asked how the NRC would



Haney

approach the fuels and materials licensing issues of SMRs in which fuel would be sealed in the reactor at the factory and remain there until the reactor is returned to the manufacturer at the end of its operating life. She said that NRC officials have discussed this, mostly in relation to the fuel, and initially there is a belief that this could work. The technical staff, she said, is mainly concerned about the fuel being secured in a reactor moved to and from the user's site because the reactor itself must be certified as a transport package, unless another package is placed around it. She encouraged developers of these kinds of SMRs to meet with the NRC early on.

Virtually every SMR design is said by its developer to have inherent safety and efficiency features that should make some of the regulatory requirements imposed on large LWRs unnecessary. The NRC has maintained for years that it favors a "technology neutral" approach to licensing and design approval, but the burden is still on the developer to show that existing requirements need not apply to an SMR. Michael Mayfield, director of the Advanced Reactor

Program in the NRC's Office of New Reactors, described the issue identification and ranking process (IIRP) the agency is using to address SMR policy and technical issues. While it will not resolve any of the issues, he said, the IIRP is intended to show the areas of greatest concern and whether appropriate remedies for SMRs need legislation,



Mayfield

regulatory changes, or further research. According to Mayfield, the IIRPs for emergency planning and control room staffing have been completed, and the ones for source term and security were to be completed in August. An IIRP on cross-organizational issues (among the offices within the NRC) was due for completion in September.

Randy Douet, vice president for business development at Entergy Nuclear, addressed the Department of Energy's Next Generation Nuclear Plant (NGNP) project. Federal legislation established the effort to design and build a very-high-temperature gas-cooled reactor at Idaho National Laboratory. Entergy, 11 other companies, and the Electric Power Research Institute participate in the NGNP Industry Alliance, and



Douet

while the intent is for the NGNP to proceed as a cost-shared public-private partnership, Douet said that the DOE has not yet formed the partnership to make cost-sharing possible. Douet also stated that siting the project in Idaho would not take advantage of the NGNP's potential cogeneration of process heat for industry, while Entergy's service area in Louisiana includes several potential customers, such as the petrochemical industry.

Douet was asked later whether Entergy wants to host the NGNP. He said that the alliance, including Entergy, wants the NGNP to be sited where there are end users, and he said he believes that the site should be chosen by the alliance, and not by the DOE.

Entergy submitted two COL applications to the NRC in 2008—one for Grand Gulf, in Mississippi, and the other for River Bend, in Louisiana—but suspended them after negotiations with GE Hitachi Nuclear Energy broke down over the pricing of the ESBWR reactor. The example Entergy used as a possible base of NGNP heat customers is the vicinity of Entergy's Waterford site in Louisiana.—*E. Michael Blake* **IN**