

Inside NRC

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NRC staff completes review of AP1000 design, Vogtle COLs

The NRC staff has concluded its technical reviews of Westinghouse's AP1000 reactor design and Southern Nuclear Operating Co.'s application to build and operate two of the reactors at its Vogtle plant, sending both matters to the commission for a final decision.

Georgia Power plans to build two AP1000s at Vogtle, where Southern Nuclear runs two nuclear units. Georgia Power and Southern Nuclear are subsidiaries of Southern Co.

Including Southern Nuclear's Vogtle expansion project, NRC is reviewing six applications to build 12 AP1000 units. Also, four AP1000s are under construction in China.

The schedule for final commission action became clearer last week. The final AP1000 design certification rule, if approved by the commission, is scheduled for publication in the Federal Register in January, NRC staff said in an August 9 paper, Secy-11-

0110, supporting issuance of combined construction permit-operating licenses, or COLs, for Southern Nuclear to build two AP1000s at Vogtle. The design certification rule would become effective 30 days after publication, the staff said.

A mandatory hearing on the Vogtle licenses might begin as soon as "later in September," the agency said on its website August 11. It did not provide

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Jaczo votes on Fukushima review, but path forward not clear

NRC Chairman Gregory Jaczo's vote last week did not settle how the commission should review and vote on recommendations of the agency's task force on the Fukushima nuclear accident in Japan.

The NRC task force released findings of its 90-day review of the Fukushima accident July 13, and the commission was briefed on the report July 19 (INRC, 1 Aug., 4). Jaczo has called for the commission to vote on the recommendations within 90 days.

All five members of the commission have now voted, but each has recommended different approaches to the review. And the vote is not final until a majority of commissioners agree on and publicly affirm language for a staff requirements memorandum, a process of consensus-seeking that can sometimes take months.

"Rather than voting directly on the Task Force's recommendations, my colleagues have instead elected to vote proposals outlining their own

approach to managing the process," Jaczo said in comments attached to his vote sheet, released by NRC August 10. "I believe this is the result of a flawed voting system that encourages the Commission to sidestep the actual substantive policy issues presented."

Jaczo said he had decided to vote simultaneously on both on the process and the task force recommendations. He reiterated his proposal that the commission vote on each task force

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Senators disagree on NRC Fukushima review

Democratic and Republican members of the Senate Environment and Public Works Committee disagreed at a committee hearing August 2 on how quickly the NRC should act on recommendations of an agency task force that reviewed the Fukushima nuclear accident in Japan.

Senator Barbara Boxer, a Democrat from California who chairs the committee, urged the five members of the commission, all of whom testified, "to act promptly" on "near-

term" task force recommendations, such as improving the ability of US nuclear power plants to respond to prolonged loss of electric power, as happened at Fukushima.

The commission has not reached agreement on a process for reviewing the recommendations, which were released July 13. NRC Chairman Gregory Jaczo has urged the commission to review and vote on the task force recommendations within 90 days. The Nuclear Energy Institute has said a 90-day review of the

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recommendations would be "too rushed."

"It should not take longer than 90 days for NRC to accept or reject [the short-term recommendations] and move toward their implementation," Boxer said during the hearing. "Any stalling will not be viewed favorably by the American people, I can assure you. Their support for nuclear power is waning."

Republicans, including Senator James Inhofe of Oklahoma, the ranking member of the committee, said the task force had found no "imminent" threat to safety at US nuclear power plants. Inhofe said that NRC staff, the nuclear industry and the public should have an opportunity to review and comment on the recommendations before the commission votes. This approach, in various forms, was recommended by at least three of the five commission members in their vote sheets.

"We have time" and "need to take time to learn the right lessons" from Fukushima, Inhofe said during the hearing. After the Three Mile Island-2 accident in 1979, NRC "took actions that were not subject to structured review" that "were subsequently found not to have substantial safety benefit and were removed," Inhofe said, citing the Fukushima task force report. Commissioner George Apostolakis made a similar point to reporters after a July 19 commission briefing by the task force.

NRC not 'broken'

The task force's first recommendation in its report was that NRC establish "a logical, systematic, and coherent regulatory framework for adequate protection

that appropriately balances defense-in-depth and risk considerations." Inhofe and other Republicans challenged that recommendation August 2, saying that the NRC regulatory system is not "broken."

"There is no need to rush to regulate," Senator John Barrasso, a Wyoming Republican, said during the hearing. The task force report contained "a lot of recommendations for more Washington red tape," Barrasso said.

"NRC should focus on solving specific safety weaknesses" identified in the Fukushima review, "rather than allowing itself to be distracted by redesigning a regulatory framework that has served us very well," Inhofe said.

Senator Bernie Sanders, a Vermont Independent, said "delay is not an acceptable option." Apparently some commission members "want more study and review and delay," Sanders said. "It means that the issue is going to be swept under the rug, that nothing is going to happen."

"We're going to have you back [before the committee] every 90 days, until I know what you're doing" about the recommendations, Boxer told Jaczko and the other commissioners. "We're going to stay on this."

Jaczko told reporters after the hearing he was "interested in voting on the recommendations" rather than "getting bogged down in the process."

"I think the process is something we can work out. And as I heard during the hearing, it seems like there's a lot of agreement [on the commission] on the best way to move forward," Jaczko said.

—Steven Dolley, Washington

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License reviews must account for Fukushima, groups tell NRC

A group of 25 environmental and anti-nuclear organizations filed challenges last week seeking to slow NRC action on applications for new reactor licenses and license renewals in light of findings of an agency task force on lessons learned from the Fukushima accident.

In 19 filings, the groups contended that the National Environmental Policy Act, or NEPA, requires that the environmental implications of the task force report be taken into account before the agency can take action on the license applications, the groups said in an August 11 statement.

"We're quite clear that this triggers a NEPA analysis," Jim Warren, executive director of the anti-nuclear North Carolina Waste Awareness and Reduction Network, said in an interview August 11. Such an analysis could be time-consuming and costly, the groups said in their filings.

Filings were made in 18 administrative proceedings for new plant licenses and license renewals, as well as the agency's review of the AP1000 reactor design, the statement said. The license applications and reactor design are being reviewed by NRC Atomic Safety and Licensing Boards before the commission acts on them.

The groups included Beyond Nuclear, Friends of the Earth, the Green Party of Ohio, the New England Coalition, Riverkeeper Inc., San Luis Obispo Mothers for Peace, the Michigan chapter of the Sierra Club and the Southern Alliance for Clean Energy, and others.

The challenges were filed in license renewal proceedings for Entergy's Indian Point, FirstEnergy's Davis-Besse, NextEra Resource's Seabrook and Pacific Gas & Electric's Diablo Canyon. Similar filings were made in the new plant license proceedings of Duke Energy's proposed William States Lee plant, Georgia Power's two-unit Vogtle plant expansion, South Carolina Electric & Gas's planned two-unit Summer station expansion, and Tennessee Valley Authority's Watts Bar-2.

NRC will review the filings "and respond appropriately in each current proceeding," agency spokesman Scott Burnell said in an email August 11.

The same groups filed a petition with NRC in April seeking to halt all reactor licensing activities until the lessons from Fukushima were better understood (INRC, 25 April, 2). That petition has not been acted on by NRC, the groups said.

Some filings will be considered by the licensing boards reviewing new licenses or renewals, while others will be considered in the agency's ongoing review of the petition, Burnell said. There is no timetable for the commission to act on the petition, he said.

The commission is considering how to proceed on the recommendations of its Fukushima task force. Some commissioners have said the recommendations require further analyses by NRC staff, while Chairman Gregory Jaczko has urged faster action on the report.

In a paper on the Vogtle combined construction permit-operating license application, made public August 11, NRC staff said the commission could require some recommendations of the task force to be added as license conditions for COLs. Those conditions could include confirmation of the units' capabilities associated with station blackout as well as enhanced onsite emergency response and emergency planning, the paper said.

—William Freebairn, Washington

Insurance regulations are adequate for near-term SMRs: NRC

NRC staff agrees with the nuclear industry that current law and regulations on insurance and liability are generally "adequate" for small modular reactors, an agency official said last week, but some concerns must be addressed.

The regulations could "accommodate most of the SMR designs planned for near-term deployment," Stewart Magruder, branch chief of the advanced reactor program at NRC's Office of New Reactors, said during an August 11 meeting with industry representatives. Magruder said the staff's assessment had focused on so-called "integral PWRs" — designs with the steam generator, pumps and control rod drives located inside the reactor vessel — and on the Next Generation Nuclear Power plant.

NRC staff is evaluating issues related to adequate insurance coverage for SMRs, and it plans to develop a paper on the topic to send to the commission this fall, Magruder said.

The Nuclear Energy Institute submitted a position paper to the agency in June, saying existing "financial protection mechanisms prescribed in the Price-Anderson Act and NRC regulations are sufficiently flexible" and therefore "do not appear to pose significant obstacles to commercialization of SMRs."

The Price-Anderson Nuclear Industries Indemnity Act became law in 1957 and has been renewed and amended several times. The law requires nuclear power plant licensees to purchase insurance coverage against nuclear-related incidents to cover third-party claims.

Any monetary claims that fall within the insured amount would be paid by the insurer. The Price-Anderson fund, which is financed by the reactor licensees, would be used to make up the difference. Actual payments by companies in the event of an accident are capped at \$17.5 million per year until either a claim has been met or the licensee's maximum individual liability of \$111.9 million has been reached.

The amount of insurance a plant has to purchase depends on the electric power output of the largest reactor, regardless of the number of units, at the site. Reactors with capacities under 100 MWe are required to maintain less insurance coverage than those whose outputs are above that power threshold. For example, according to the NEI position paper, a SMR plant of

12 modules, each at 45 MW, would be required to obtain the same amount of insurance as a plant with one 45-MW module, and less than a single unit plant of 125 MW.

Because many SMR developers are designing plants with multiple units, or modules, per site, Magruder said NRC staff is concerned “whether some combination of modules might be under-insured.”

“If reactor modules share safety equipment, if individual modules are under 100 megawatts electric and the entire facility is greater than 100 megawatts electric,” or if the reactor also produces process heat, existing regulations could lead to under-insurance, he said.

Edward Burns, an attorney specializing in nuclear power, said the number of units per site is reflected in the premium that the insurance company charges, along with other “site specific” factors such as the reactor type, ownership, location and the density of population nearby. Burns is a member of NEI’s task force on SMR licensing and was interviewed August 12.

NEI said the industry “does not recommend statutory or regulatory changes at this time,” but it does not rule out seeking future changes “as work continues on SMRs, and as the numbers, configurations, and timing of the first US SMR deployments become clear.”

—Yanmei Xie, Washington

Industry proposes no change to security regulations for SMRs

Existing NRC regulations for nuclear power plant security can accommodate the first wave of small modular reactor designs, industry representatives told agency staff at an August 10 meeting.

Current security regulations have both performance-based objectives and prescriptive requirements. SMR designers “have to demonstrate that they can meet the performance-based objectives,” Victoria Anderson, project manager of risk assessment at the Nuclear Energy Institute, said in an interview after her presentation at the meeting.

Anderson said it will be incumbent on each SMR designer to demonstrate to NRC that its reactor design can meet security objectives. The industry’s intent, she said, is for SMRs to “provide the same level of security” expected of “the current fleet.”

She said an NEI task force on SMR regulations is expected to complete a position paper on security by the end of the year.

“For the prescriptive regulations,” Anderson said, “the designer will have to demonstrate, as part of the exemption process, that they can meet the current objective, via alternative means.” Security regulations allow reactor vendors to apply for exemptions if they can prove that an alternative approach to the prescriptive measures can meet

the regulations’ intended objectives.

During her presentation, Anderson said SMR design features would differ from operating large reactors and suggested those features could be considered favorably toward meeting security objectives. For example, some SMR concepts would have integral designs with the reactor and steam generator contained within the reactor vessel, and some designs would have the reactor buried underground or underwater, she said.

“In general, we have greater simplicity in the systems required for safe shutdown,” meaning fewer systems are available for adversaries to target, Anderson said.

SMRs could also have smaller source terms, larger passive heat sinks, “and the smaller total plant footprint, which would make the plant easier to control,” she said.

Responding to Anderson’s presentation, Peter Lee, senior security program manager in NRC’s Office of Nuclear Security and Incident Response, said the security implication of SMR design features remains to be determined.

“Simplicity sometimes is good for the safety side, but [it] may or may not be an advantage to security,” Lee said.

For reactors that would be sited underground or underwater, “you still have pathways to get into the facility for operations,” Lee said in an interview after the meeting, adding that security evaluation of the design will be “contingent on how you protect” those pathways.

Lee agreed that current security regulations “are adequate” for “near-term” SMR designs, which he said are likely to be integral PWRs — “smaller in scale and size” than large LWRs but with “similar” reactor cores.

More advanced SMR designs, some of which may use fuel “that’s not traditional,” may pose additional questions, Lee said. While LWRs use uranium enriched to 5%, one small fast reactor concept, which Lee did not name, proposes to use uranium enriched to about 19%. Such fuel would change the calculation of the source term — the amount of radioactive material that could escape in worst-case accident scenarios — and potentially affect the consequences of an attack on an SMR, he said.

—Yanmei Xie, Washington

NRC, industry developing regulatory approach for SMR staffing

NRC staff and the nuclear industry are working to develop a two-step approach to address challenges posed by small modular reactor designs to regulations on operator staffing.

“The first wave” of SMRs likely to be ready for “near-term deployment can be licensed using existing regulations” through an exemption process, Jeannie Rinckel, executive director of regulatory affairs at the Nuclear Energy Institute, said at an August 10 meeting with NRC staff. The industry will seek regulatory revisions in the longer term “for the

subsequent SMRs,” Rinckel said.

NRC staff last month recommended a similar approach to the commission. “Processing a limited number” of SMR design certification and operating license applications “using exemption requests to address staffing is the best near-term solution,” staff said in a July 22 paper, Secy-11-0098. “Once experience is gained, the staff would initiate the long-term solution which is to revise the regulations to provide specific control room staffing requirements for SMRs,” it said.

Regulations prescribe the number of operators required for each unit and for each control room. A three-unit plant is required to have at least two control rooms and eight licensed operators. The NuScale design, however, is scalable, allowing up to 12 modules of 45 MW each to be operated from one control room, the company said on its website.

The control room regulations present a problem for NuScale Power, Charles Weaver, NuScale’s human factors engineer, said in an interview after the meeting. “What we would really like [NRC] to do is to change the rules, but we understand that rulemaking takes a long time,” Weaver said in an interview after the meeting.

NuScale plans to submit its design certification application “in the next year or so,” he said. In order to meet this schedule, Weaver said, NuScale will need exemptions from regulations so a NuScale plant could have “more than three reactors [operated] in one control room” and “one reactor operator overseeing more than one reactor at a time.”

Some other SMR developers face fewer challenges in meeting staffing regulations, Edward Burns, an attorney specializing in nuclear power who is a member of NEI’s task force on SMR licensing, said in an interview after the meeting.

Westinghouse proposes one control room per reactor for its 200-MW SMR design, and Babcock & Wilcox’s 125-MW mPower design would have one control room operate two units, Burns said.

NRC staff said in its paper that agency guidance has established “a general framework” for staffing regulation exemption reviews, but such exemption reviews will still be “challenging for SMR designs because of the differences between the SMR designs and previously licensed reactor designs.”

Of the differences NRC staff has identified, SMR operators may be required to ~~u~~two

authority to regulate nuclear power plant safety does not preempt a state's authority to bar such plants from operating in that state (INRC, 20 June, 4).

NRC spokesman Neil Sheehan said August 10 that the agency does not have any plans to get involved in the case "at this point, but that doesn't preclude the possibility that a judge could ask for a federal agency perspective at the appeals level." An NRC commission vote on whether the agency should ask DOJ to intervene in the case has not been finalized, and there is no information on when or if it will be, Sheehan said.

Entergy spokesman Larry Smith declined to comment August 10.

—Steven Dolley, Washington

NRC to revise Part 21 regulations on defective parts

NRC is planning to revise its requirements for reporting defective components, despite the nuclear industry's position that the existing regulations are working and revising guidance is the best way to proceed, agency officials said during a public meeting August 1.

Regulations in 10 CFR Part 21 require licensees to report to NRC any information that indicates that safety-related components fail to comply with regulatory requirements relating to substantial safety hazards or contain defects that could create a substantial safety hazard.

The review of those regulations is timely, given that technology has changed since Part 21 was adopted in the 1970s, new reactor construction is set to begin and there are many suppliers entering the nuclear supply chain, Laura Dudes, director of the division of construction inspection and operational programs in NRC's Office of New Reactors, said during the meeting.

The agency will likely hold a series of public meetings as part of the process for revising Part 21, Dudes said.

In a document prepared for the meeting, NRC staff outlined 25 "areas for improvement" of the Part 21 rules. Those include 16 topics where staff believes changes in regulations are needed, including requirements for procurement documents, clarification of reporting requirements, and defining commercial-grade items. Most of the items would require additional regulatory guidance, either instead of or in addition to regulatory changes, the document said. Only three areas would get new regulatory requirements, according to the document.

NRC began preliminary action toward new rulemaking affecting Part 21 in late 2009, Victor Hall, lead vendor inspector in the agency's Office of New Reactors, said in a presentation at the August 1 meeting. An agency working group on the subject was formed in January 2011, Hall said.

NRC's Office of the Inspector General said in an April report that its audit found some manufacturing defects

were not being reported because of contradictions in agency regulations and guidance, potentially reducing safety margin (INRC, 28 March, 8). OIG recommended that regulations be revised, that new interim guidance be issued and that existing guidance be revised to eliminate contradictions with regulations.

The OIG audit report has "accelerated our schedule a little bit," Hall said.

The next step is a staff paper proposing that a regulatory basis for rulemaking be developed, Hall said. That paper is expected to be sent to the commission in September, he said.

If the commission agrees with the staff's recommendations, a regulatory basis for rulemaking could be developed in about a year, he said.

The Nuclear Energy Institute supports agency efforts to simplify reporting requirements, Mark Harvey, NEI's senior project manager for new plant deployment, said during the meeting.

The industry believes existing regulations covering defects in installed equipment are clear and licensee implementation has been consistent, Harvey said. "At this point, we see no need to revise this regulation," he said.

The guidance on commercial-grade dedication, where companies take commercially available products and prove they can be used safely in nuclear projects, could be modified to eliminate confusion, Harvey said. The same could be done to clarify the relationship between reporting requirements for events under 10 CFR Part 50 associated with events and for defects under Part 21, Harvey said.

The thresholds for reporting defects under Part 50 and Part 21 are different, leading to confusion among licensees, the OIG report said.

Some in the industry believe that if a defect does not meet the reporting requirements in Part 50.72 or 50.73, it need not be reported under Part 21, the OIG report said. Many NRC staff members, however, do not believe that is the case, Hall said during the meeting.

Modifying guidance is "much preferable" to developing new regulations because it can be done more quickly, Harvey said during the meeting. The industry is concerned that rulemaking, unless focused narrowly, could grow beyond the original intent, Harvey said in an interview August 11.

Changing guidance is "one of the most effective and timely ways to get information out there," Marc Tannenbaum of the Electric Power Research Institute said during the meeting.

Commercial-grade dedication is being used more frequently by licensees to deal with the obsolescence of some original equipment, Tannenbaum said.

The industry welcomes the staff's decision to prepare a paper on the regulatory basis for a rulemaking because that would allow discussion over the need for new regulations to continue, Harvey said. "We're willing to listen. We want to participate in the process," he said in the interview.

—William Freebairn, Washington

NRC proposes enforcement revisions for facilities under construction

NRC seeks comments until September 8 on proposed revisions that would allow additional enforcement discretion for some projects under construction, the agency said in an August 9 Federal Register notice.

NRC staff has “developed a number of approaches” for commission consideration that would allow enforcement discretion to be exercised in some “cases involving the holder of a Limited Work Authorization (LWA) or Combined License (COL)” to build and operate a new nuclear power reactor, the agency said. Enforcement discretion allows a licensee to address through other means, such as corrective action programs, an issue that would otherwise be cited as a violation.

NRC is actively reviewing 12 applications for COLs to build 20 nuclear power reactors. A project to build two AP1000s at Southern Co.’s Vogtle plant has been issued an LWA to proceed with certain preconstruction activities prior to receiving a COL.

Comments may be submitted at www.regulations.gov, referencing Docket ID NRC-2011-0176.

Northern States Power contests white finding for Prairie Island-1

Northern States Power Co. is challenging NRC’s determination of the significance of a violation issued for the company’s Prairie Island-1 in a July 28 meeting with the agency.

NRC staff’s preliminary white finding, which represents low to moderate safety significance in the agency’s reactor oversight process, should be green, or very low safety significance, Mark Schimmel, Prairie Island site vice president, said in an August 10 email.

The finding was issued after an NRC inspection in May found “both trains of safety-related battery chargers were not capable of performing their safety function from initial installation in 1994 due to being susceptible to failure during certain design basis events,” NRC said in a June 9 letter to NSP.

“Specifically, these battery chargers had the potential to stop providing an output, or ‘lock-up,’ if their alternating current input voltage dropped below the nameplate minimum voltage of 90 percent at the battery charger motor control center,” the letter said.

Events that could cause such a condition, or “initiating events,” include loss of coolant accidents, stuck-open power operated relief valves, a steam generator tube rupture, and a main steam line break, it said.

Although battery chargers at Prairie Island-1 and -2 have such problems, unit 2 is estimated to have a lower core

damage frequency, partly because batteries at unit 2 are estimated to have a longer life than at unit 1, the NRC said. Therefore, it said the finding for unit 2 was preliminarily determined to be green, while unit 1 was white.

In the agency’s color-coded, four-category reactor oversight system, a white finding ranks the second-lowest and a green finding has the least safety significance.

The NRC letter said the white finding “is being considered for escalated enforcement action,” which can include fines.

Schimmel said Prairie Island-1 has taken “[c]ompensatory measures ... since the issue was identified,” has replaced the unit’s battery chargers and plans to replace chargers at Prairie Island-2 during its spring 2012 refueling outage.

“This condition did not represent any actual failure of plant systems or equipment nor did it pose any threat to the public or plant workers,” Schimmel said.

NRC said in its letter that NSP’s compensatory measures include revising emergency operating procedures, placing tools and designating an operator “to perform the manual actions needed to recover the battery chargers if needed.”

The agency is reviewing information submitted by NSP and “will make a final determination on the finding’s safety significance shortly,” NRC Region III spokeswoman Viktoria Mitlyng said in an August 11 email.

—Yanmei Xie, Washington

NRC increases oversight at Dominion’s Millstone-2

Dominion’s Millstone-2 in Connecticut will receive additional oversight from the NRC after an inspection finding was determined to be of “low to moderate safety significance,” the agency said in a statement August 8.

Such white findings represent the second-lowest level of safety significance in the agency’s reactor oversight process.

NRC said the finding involves failure of plant personnel “to carry out their assigned roles and responsibilities and inadequate reactor power-level management during main turbine control valve testing,” which “contributed to an unanticipated reactor power increase” from 88% to 96% on February 12.

The finding was identified during an NRC special inspection conducted February 22-April 14 in response to the power increase, the agency said. The finding was discussed at a July 19 regulatory conference with Dominion.

A supplemental inspection will be conducted “at a future date” to evaluate Dominion’s corrective actions, NRC said.

Dominion is “extremely disappointed with our performance during this event,” the company said in a statement August 8.

“We conducted a thorough root cause investigation to understand all of the contributing factors in the event. We

also brought in experts from the fleet and outside industry peers to assist with our investigation. The lessons learned from our investigation have been incorporated into our operator training program, corrective action system, and station processes," the company said.

—Steven Dolley, Washington

OPPD completes corrective action for Fort Calhoun white finding

The Omaha Public Power District has not decided whether it will appeal a white finding NRC issued last month for problems with the reactor protection system at Fort Calhoun, but the utility has completed the required corrective actions, OPPD spokesman Mike Jones said August 11.

The 526-MW reactor will be subject to increased NRC oversight as a result of the finding, the agency said in a July 18 letter to OPPD.

In May, NRC issued a preliminary yellow finding, which has "substantial safety significance," after one of four electrical contacts used to automatically shut down the reactor failed during a scheduled test in June 2010. In July, the agency made its final determination that the finding was white, which has "low to moderate safety significance."

The electrical contact that failed and its backups have been replaced, Jones said in an interview.

NRC's reactor oversight process classifies regulatory findings as green, white, yellow or red in order of increasing safety significance.

NRC will schedule a supplemental inspection to evaluate OPPD's corrective action, NRC Region IV spokesman Victor Dricks said in an August 11 interview.

—Elaine Hiruo, Washington

Cooper receives white finding for issue with core cooling valves

NRC issued a white finding, reflecting "low to moderate safety significance," to Nebraska Public Power District for potential problems with operating cooling valves at its Cooper plant in the event of a fire.

NRC said in a June 7 notice of violation, made public early this month, that NPPD failed to verify that procedures used to safely shut down the reactor in case of a fire would reposition three motor-operated valves, or MOVs, needed to establish core cooling.

The procedures contained steps that would not reposition those valves, NRC said. The agency said it had issued a notice of violation with a white finding in June 2008 that identified a condition adverse to safety in NPPD's emergency fire procedures, and the procedures would not work as written.

When NPPD corrected that violation, it failed to sufficiently evaluate the associated circuits to identify and correct the problem with the three MOVs, NRC said in the notice.

NPPD spokesman Mark Becker said in an e-mail August 11 that a modification is being designed that would enable the reactor to shut down with the three MOVs in the event of a fire.

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schedule details.

NRC has not yet issued any COLs, and agency officials have said they will not issue any until a design certification rule for the reactor referenced in a given license application is published and effective. Southern Nuclear said in a white paper last month it believes the commission could legally issue the Vogtle COLs as soon as it affirms its vote approving a final rulemaking for AP1000 design certification.

NRC's review determined there was no safety aspect that prevented the issuance of either the Vogtle COLs or a limited work authorization requested by Southern Nuclear for the Vogtle expansion, the agency said in a statement August 9.

Southern has said it applied for the limited work authorization, or LWA, to allow it to perform some additional construction work before the Vogtle COLs are issued. The LWA would be in effect only if the COLs were delayed, NRC said in a statement August 9.

NRC similarly found no obstacles to approving the amended AP1000 design, which had encountered several licensing delays in the last year (INRC, 4 July, 3). The 1,500-page final safety evaluation report for the AP1000 was completed in early August and will be publicly available soon, the agency said on its website August 11.

A draft final design certification rule will be sent to commission "in the next few weeks," the agency said. The

commission is expected to complete its vote by the end of the year, NRC said.

The completion of the staff reviews of the amended AP1000 design and of the Vogtle COL application, the so-called "reference" application for the design, were greeted as milestones by NRC and the industry last week.

"We're happy that the NRC technical staff has approved the amended design and confident that the NRC Commissioners will do the same so construction of AP1000 units can begin" in the US, Westinghouse President and CEO Aris Candris said in a statement August 8. "We're in the home stretch to receive final approval of the amended AP1000 design."

Southern said it welcomed the issuance of the safety evaluation report for the Vogtle project. "The commission staff has determined the Vogtle design is safe, meets all regulatory requirements, and is acceptable for issuance of the COL," Southern said in a statement August 9. "This action allows the hearing process to begin before the commission votes on the issuance of the Vogtle" COLs, the company said.

Tom Clements, a campaign coordinator for the anti-nuclear group Friends of the Earth, said issuance of the AP1000 safety evaluation report was "premature," given the modified documentation Westinghouse submitted and new regulatory requirements that could emerge from the NRC's review of lessons from the Fukushima nuclear accident in Japan (INRC, 1 Aug., 3). The agency should have issued the report for a round of public comment on the changes made to AP1000 design documents in recent months, Clements said in an email August 9.

NRC "is not taking into account what is to be learned from the Fukushima accident," Clements said. The agency is rushing to approve the reactor design and COLs to avoid slowing the schedules of Georgia Power and harming the commercial interests of Westinghouse, he said.

The Vogtle final safety evaluation report was made public August 11. In the report, the staff recommends that the commission find the Vogtle COL application meets the requirements of the Atomic Energy Act and NRC regulations, that Southern Nuclear is technically qualified to build and operate the units, and that the units would not harm the health or safety of the public. The final safety evaluation report is in NRC's Adams document system under accession number ML110450302.

The safety and environmental reviews are the two main parts of the agency's consideration of COL applications. The environmental review of the Vogtle COLs was completed in March.

NRC has said final commission action on the Vogtle COLs could be completed by December. The Vogtle COLs, if issued, would be the first under the agency's new Part 52 rules that created the combined license option. The last construction permit issued under the older Part 50 rules was in 1978 for the Shearon Harris plant, Burnell said.

If approved, the Vogtle COLs would be the first new operating licenses issued in the US since 1996.

If there is a delay in issuing the COLs, Southern Nuclear could benefit from an LWA application it submitted in 2009. That LWA, included in the FSER, would be issued as part of the COLs and would allow Southern Nuclear to place reinforcing steel, sumps and drain lines for the concrete base slab on which the reactor power block buildings will be constructed, the FSER said. The LWA would also allow the concrete slab to be poured, the FSER said.

The agency has said it could take action in January on the application of South Carolina Electric & Gas and partner Santee Cooper to build two AP1000s at its existing Summer station.

"The issuance of the FSER for the AP1000 design is a monumental step on the journey towards construction of the next wave of nuclear reactors in the United States," Bill Timmerman, chairman and CEO of SCE&G parent company Scana, said in a statement August 10.

The AP1000 design was originally certified by NRC in 2006. The design was amended to strengthen the shield building and meet new NRC requirements for resistance to aircraft impact. NRC said, however, that the new shield building design did not meet requirements, and Westinghouse made modifications last year.

NRC Chairman Gregory Jaczko said earlier this year that additional technical problems had developed in the agency's review of the AP1000 reactor design, delaying final action by the agency. Westinghouse submitted revised documentation for the reactor in June, which was reviewed by staff as part of the safety review.

—William Freebairn, Washington

Jaczko ... *from page 1*

recommendation within 90 days.

"Voting only on process," he said, would encourage "the current Commission's preoccupation with process at the expense of nuclear safety policy" and would ensure that the commission would "never vote" on the actual recommendations.

Jaczko was critical of some of his colleagues' recommendations. He said, for example, that Commissioner William Magwood's suggestion that the task force recommendations each be presented individually to the commission in the form of voting papers "is a level of micro-management that the Commission should not engage in and it could take years to complete."

Jaczko said he supports the task force's recommendations to increase the ability of nuclear power plants to cope with extended station blackouts, harden containment vents at some reactors to reduce the risk of hydrogen explosions, and improve the ability to monitor conditions in spent fuel pools.

"I also believe the Commission should consider in the long term if there should be new regulations to require

licensees to move spent fuel to dry cask storage within a specific time frame,” Jaczko said. Such action has been urged by several environmental and anti-nuclear groups, but task force members told the commission at the July 19 briefing that this was not one of their recommendations because they did not have sufficient information on the Fukushima accident and did not believe moving fuel to dry storage is immediately needed to improve safety.

Commissioner George Apostolakis has said that Jaczko’s 90-day time frame is realistic but has also cautioned that the agency should avoid the sort of “unnecessary overreaction” that followed the Three Mile Island-2 accident in 1979.

Also, Apostolakis and the other three commissioners — Magwood, William Ostendorff and Kristine Svinicki — said in comments attached to their vote sheets that they want the task force findings to be reviewed by NRC staff, and want to seek input from the nuclear power industry and the public, before voting on the recommendations (INRC, 1 Aug., 1).

Apostolakis said in his vote sheet comments that he “support[s] Chairman Jaczko’s goal of reaching a timely disposition of the Task Force’s recommendations.” He said the commission “should strive to reach a decision on the recommendations within 90 days from the date” the vote is completed — somewhat different from Jaczko’s proposal that the commission vote within 90 days of the release of the task force report.

Apostolakis also said, however, that he agreed with Magwood that “some of the Task Force’s proposals raise

technical and regulatory questions that will require further analysis.”

Apostolakis said that NRC’s executive director for operations should prioritize the task force recommendations, “interact” with public stakeholders, and then prepare a paper for the commission to vote on which “should evaluate each recommendation, explain the basis for the prioritization, and identify any additional recommendations that the staff deems appropriate.”

The commissioners’ vote sheets and comments are at www.nrc.gov/reading-rm/doc-collections/commission/cvr/2011/.

US Representative Ed Markey, a Massachusetts Democrat and nuclear power critic, said in a statement August 10 that “Chairman Jaczko also is right to call for an up-or-down vote by the rest of the Commission on the recommendations within 90 days of the Task Force report. Unfortunately, Commissioners Magwood, Ostendorff, and Svinicki have voted not to vote on the Task Force’s common-sense recommendations.” Jaczko was a member of Markey’s staff before working for Senator Harry Reid and later joining the commission.

Members of the Senate Committee on Environment and Public Works, the committee that oversees NRC, split largely along party lines on the question of how the commission should review the recommendations during an August 2 hearing at which the commissioners testified. Democratic members urged prompt action to ensure nuclear safety, and Republicans cautioned against haste and unnecessary regulation.

—Steven Dolley, *Washington*