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Coming up . . .

March—18th Annual Reference Issue

April—Special Section on Outage Management

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Feature Article

42

The case for nuclear fuel recycling

BY MELVIN R. BUCKNER AND WILLIAM E. BURCHILL

Power

20

Most plants now comply with NRC's post-Fukushima spent fuel pool instrumentation order. NRC reduces oversight of seven reactors. ACRS endorses license issuance for Duke's Lee project. NRC docket petition to define "important to safety." NRC staff advises commission not to revise regulatory framework. Renaissance Watch: An update on developments that may lead to new power reactors. NRC issues confirmatory order for violations of spent fuel canister weld-testing procedures at Monticello. Southern California Edison fined \$16.7 million by CPUC for unreported talks regarding San Onofre. No new Fermi-2 license renewal hearing; draft second supplemental EIS issued for Indian Point. Extra North Anna-3 seismic work completed; other licensing actions.

Security

27

NNSA to put Los Alamos National Laboratory contract up for bid after 2017; other NNSA news. Nuclear Threat Initiative says global nuclear security efforts have slowed. United States and Jordan sign agreement to fight nuclear terrorism. License amendments allow weapons upgrades for security forces at California and New York nuclear plants.

On the cover: The "heart" of nuclear fuel recycling is the separation of fissile uranium and plutonium from other materials (unfissile uranium, other actinides, fission products, and structural components) in used nuclear fuel. This is done remotely in an elaborate chemical processing system such as this one at the UP3 reprocessing plant operated by AREVA at La Hague (top photo) in Cherbourg, France. *Pictured across the bottom:* Used nuclear fuel arrives at a reprocessing plant in a robust, shielded transport cask such as the one shown (left photo) arriving at La Hague. The separated fissile uranium and plutonium are fabricated into new nuclear fuel pellets (middle photo) at a mixed-oxide fuel fabrication plant, such as AREVA's MELOX facility at the Marcoule nuclear site in the Gard region of France. New MOX fuel assemblies, such as this one (right photo) from the MELOX fuel fabrication plant in Bagnols-sur-Cèze, France, look exactly like traditional uranium oxide fuel assemblies and provide power in 21 of the 58 nuclear power reactors operated by Électricité de France. (All photos: AREVA. Top, Sidney Jezequel; left, Pascal Dolémieux [Metis]; right, Philippe Lesage.) To read more on the case for nuclear fuel recycling in the United States, see the article that begins on page 42.



International 34

India's deal with Russia caps Prime Minister Modi's nuclear year. Restart procedure begun at Japan's Takahama-3. The last Magnox reactor, Wylfa-1, closed in United Kingdom. The first Gen III+ reactor, Shin-Kori-3, goes critical in South Korea. Argentina's Embalse begins two-year refurbishment. New Hualong One joint venture formed, projects begun in China. Canada's Darlington relicensed for another decade. Belgian regulator authorizes restart of Doel-1 and -2. Fangchenggang-1, Yangjiang-3 in China begin commercial operation. South Africa authorized to start new-reactor procurement process.

Waste Management 49

Department of Energy begins consent-based siting initiative for high-level waste disposal. License for Prairie Island independent spent fuel storage installation renewed.

Fuel 55

Norway approves irradiation of Lightbridge fuel in Halden reactor. Mining production targets met, new targets set.

Meetings 57

AccApp'15: Advancing the use of particle accelerators.

Isotopes & Radiation 60

Plutonium-238 production demonstrated at Oak Ridge.

Industry 62

CB&I nuclear construction sale to Westinghouse completed; other business developments. Curtiss-Wright to supply AP1000 reactor coolant pumps to China; other contracts. MFFF gloveboxes to be rebuilt; other Part 21 reports.

Standards & Documentation 64

ANSI/ANS standard published; other actions. Four proposed regulatory guides open to comment.

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