

NRC Liaison Report
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NRC agrees to lighten penalty for former Davis-Besse supervisor

An NRC Atomic Safety and Licensing Board last month approved a settlement between the NRC staff and a former Davis-Besse supervisor, ending the adjudicatory proceeding by imposing a penalty far lighter than the one specified in an enforcement order nine months ago. A key reason for the change, the agreement said, is "new information" that has emerged since January. Even so, said a veteran industry lawyer who has no connection to the case, the sharp reduction of the penalty is "startling" and "raises some very disturbing questions" about the process NRC used in producing the initial order. The order approving the proposed settlement was issued September 29 and publicly released October 4. Under the agreement signed by lawyers for NRC and Dale Miller, who had been Davis-Besse's regulatory affairs compliance supervisor, Miller must write a letter to the agency's Office of Enforcement on the role of the compliance supervisor and on what he has learned from his experiences at Davis-Besse. Miller also agreed to make presentations to industry groups on those topics.

Industry implements terrorist mitigation measures

Contingency plans to reduce the consequences of a terrorist attack are being implemented at all US power reactors, and some details on these measures were publicly revealed for the first time last week. Doug True, president of ERIN Engineering and Research, an engineering consulting firm, outlined some of the key mitigation strategies in his October 12 presentation at the Nuclear Energy Institute's risk-informed regulation conference in Bonita Springs, Florida. Such strategies have been under development by the industry with the NRC since a few months after the September 11, 2001 terrorist attacks. But little information previously had been made publicly available on them, aside from veiled references to "B.5.b," the section of a February 25, 2002 NRC order containing security requirements. The specific actions in order are tightly protected as safeguards information. But the order requires measures for scenarios beyond the design basis. The mitigating strategies are aimed at maintaining or restoring core cooling and spent fuel pool cooling capabilities in the event of an explosion or large fire (INRC, 12 June, 9).

AmerGen questioned by ACRS on Oyster Creek drywell issues

AmerGen officials were subjected to tough questioning by members of the NRC's Advisory Committee on Reactor Safeguards at a recent meeting on Oyster Creek's license renewal application. AmerGen, a wholly-owned subsidiary of Exelon which operates the 670-MW BWR in New Jersey, has applied for a 20-year extension of Oyster Creek's operating license, which expires in 2009. Plant opponents, including antinuclear groups such as the Nuclear Information and Resource Service, have challenged the application on the grounds that the plant's steel containment drywell has corroded to the point that safe operation is compromised (INRC, 10 July, 11). These claims are being reviewed by an Atomic Safety and Licensing Board as a possible contention in a license renewal hearing, and were discussed at an October 3 meeting of the ACRS' subcommittee on plant license renewal. Michael Gallagher, AmerGen's vice president for license renewal projects, had barely begun his presentation at the meeting (attended by so many that an overflow room was needed) when subcommittee members began peppering him with detailed technical questions. The subcommittee members eventually homed in on two sets of issues: how far the drywell corrosion has progressed and the adequacy of AmerGen's aging management plan to prevent further corrosion.

Klein says international licensing unlikely, but backs MDEP expansion

NRC Chairman Dale Klein last month expressed strong support for continuation of the **Multinational Design Evaluation Program** that was started by his predecessor, but said every country would likely keep its own regulations while trying to harmonize top-level requirements for new designs. Among other things, this means that the US will not adopt IAEA standards as a licensing basis and will continue to use codes and standards established under US law.

Klein addressed the issue of the multinational program, which was formerly called the Multinational Design Approval Program, or MDAP, in his first address to the Senior Regulators Meeting organized by the IAEA during the latter's General Conference in Vienna September 21 and in an interview with Platts on the same day. MDEP is meant to foster cooperation among national regulators reviewing new reactor designs, with the goal of "not reinventing the wheel each time," as Klein put it during the interview. He said it is "very important" that designs, safety systems and operations are harmonized worldwide, saying "the nuclear field really is a global process." MDEP aims to "get agreement on concepts" for new reactors, he said, but "each country will still decide what it requires" when reviewing an actual design or construction license application.

"As a regulator from NRC, I can say that Congress wouldn't be happy for another country to tell us" how to go about licensing

NRC signs off on Toshiba-Westinghouse deal

The planned sale of Westinghouse cleared more regulatory hurdles last month, including an NRC review of the company's application for an indirect change of control of its material licenses.

Westinghouse, which Toshiba Corp. is poised to buy from British Nuclear Fuels plc, applied for the change earlier this year (INRC, 22 June, 5). Toshiba has said it wanted to close on the purchase by the third quarter, which ended September 30.

In a September 15 letter to Westinghouse, NRC's Gary Janosko said the agency has concluded that the transfer of the licenses, approvals, and certificates is in accordance with provisions in the Atomic Energy Act. Janosko is chief of the fuel cycle facilities branch in the division of fuel cycle safety and safeguards in NRC's Office of Nuclear Material Safety and Safeguards. Under areas of materials licensing in the act, NRC must make a finding that issuance of the license for special nuclear material would not be "inimical to the common defense and security, and would not constitute unreasonable risk to the health and safety of the public." NRC must make the same finding when consenting to a change of control. "We understand that there will be no change to Westinghouse's operations, corporate structure, key operating personnel or licensed activities as a result of the indirect change of control," the letter said. The application applied to four Westinghouse materials licenses, two Westinghouse transportation quality assurance program approvals, and seven Westinghouse certificates of compliance.

Domenici waste bill could put spent fuel storage on fast track

Nuclear waste legislation that could take years off DOE's current schedule for moving nuclear waste to a federal facility in Nevada, allowing utility spent fuel to be stored at a Yucca Mountain surface facility as early as 2011, was introduced in the Senate last week.

Under Domenici's "Nuclear Waste Acceleration to Yucca" legislation, which is being called "Nu-Way," the department would submit two license applications, instead of one, to NRC. One would seek NRC authorization to construct a repository at Yucca Mountain. The other, according to the bill, would seek an NRC permit to store defense spent fuel and high-level waste, as well as utility spent fuel, at a surface storage facility at the site.

Mitsubishi might find NRC lacks funding for steady review of APWR

Mitsubishi Heavy Industries wants to accelerate by three months its schedule for submitting a design certification application for its 1,700-MW advanced PWR, but a senior NRC manager told company officials last week that agency staff did not include a cost estimate for the certification review in its fiscal 2008 budget proposal.

MHI first notified NRC in May, well after preparations for NRC's FY-08 budget had begun, that it intended to seek

certification of the US-APWR. In a May 12 letter, the company said it was targeting first-quarter 2008 for a submittal and later specified that would occur in March 2008. The company now says it expects to submit an application in December 2007.

Unless the commissioners take action to include MHI's certification plans in next year's budget, the staff will not develop a cost estimate for the review until the application is filed. Matthews said the staff might be able to get started a little earlier on preparing a budget estimate if MHI were to send a letter stating it expected to soon file its application.

Commission decides to review fire protection generic letter

The commission has decided to wait to receive comments from the Nuclear Energy Institute before approving a staff recommendation to issue a long-awaited generic letter on fire protection.

In a September 28 letter to NRC, NEI complained that the requirements of the generic letter would be very costly to industry and were an unjustified backfit that had not been properly vetted by the agency.

The staff had originally planned to inform the commission that it would be issuing the letter, rather than requesting advance approval. But the matter was put out for a notation vote at the request of Commissioner Edward McGaffigan after the staff gave a briefing to him and Commissioner Jeffrey Merrifield September 21.

In a September 11 paper, Secy 06-196, the staff said the generic letter would request power reactor licensees "to review their [fire protection programs] to confirm compliance with applicable regulatory requirements in light of the relatively high probability of fire-induced circuit failures," and would "request licensees to submit a description of their licensing basis regarding multiple spurious post-fire safe-shutdown circuit analyses and their conclusion regarding compliance

ACRS differs with staff, industry on need for more PWR sump research

The NRC's Advisory Committee on Reactor Safeguards is recommending the NRC staff undertake additional research to address uncertainties related to an industry-wide effort to upgrade PWR containment sumps. But the NRC staff and industry want the immediate emphasis to be placed on getting sump upgrades installed by the end of next year.

Debris accumulation on sump screens after a loss-of coolant accident (LOCA) has the potential to jeopardize recirculation of water that might be needed to maintain long-term core cooling. All 69 US PWRs either already have or plan to upgrade their sumps in response to an NRC generic letter issued two years ago (INRC, 20 Sept. '04, 5).

In an April 10, 2006 letter to then-NRC chairman Nils Diaz, ACRS Chairman Graham Wallis noted that "many licensees plan to increase the size of their sump screens as quickly as feasible," but "it is not evident that this measure will be sufficient to resolve all long-term core cooling issues." He said that "the results of prototypical experiments planned by industry to validate screen effectiveness will be difficult to extrapolate to plant conditions" and "further work is required to provide the technical basis by which the staff can assess the adequacy of the planned modifications to the plants."

Commission may use staff paper on new plants to give review guidance

Faced with the possibility of receiving 19 combined construction permit operating license (COL) applications over the next two fiscal years, NRC staff is creating a master schedule that integrates the COL reviews with other new plant licensing activities. The schedule is to be completed in early 2007.

But the staff, in following direction from the commissioners, has not developed a prioritization system for navigating all the activities. In its latest update on preparations for the new plant licensing work, the staff said it was concentrating on developing a budget request for fiscal 2008 that would incorporate "all low and medium uncertainty activities known at this time."

The companies that have not notified the agency of their plans risk being excluded from NRC's budget, which the staff indicated could result in a lower place in the review line. The staff said it would do what it could to accommodate these "unplanned" plant projects or work activities but that there might be resource constraints. In cases where there aren't enough resources to support the unplanned, or emerging work, staff said it will give preference to COL reviews over the early site permit (ESP) reviews.

In its paper (Secy 06-187), released September 12, the staff also said it was working with industry representatives to standardize the COL and design certification applications and reviews. The standardization effort, known as the design-centered review approach to reflect standardization by reactor technology, has been endorsed by the commission and is supported by the industry.

Exelon may continue to run Salem, Hope Creek

Public Service Enterprise Group might extend for up to three years its agreement with Exelon to manage Salem and Hope Creek, even though the companies have terminated their merger plans, PSEG officials said last week.

PSEG chairman and CEO E. James Ferland said in a September 14 statement that his company "has options to renew" for up to three years a nuclear operating services agreement, currently set to expire in January 2007, under which Exelon manages PSEG's Salem and Hope Creek plants. That allows for a two-year extension with an additional year for transition.

Reactor security should be improved at the design stage, Jaczko says

Commissioner Gregory Jaczko emphasized the importance of integrating security improvements into the design process for new reactors at a September 14 public meeting at NRC headquarters.

In his remarks opening the meeting, Jaczko said that "the potential for the construction of new reactors provides an excellent opportunity to design in passive features that both make the reactors inherently more secure and reduce the need for human mitigative strategies." He said that "significantly improved separation and protection of systems necessary to maintain core, containment, and spent fuel pool integrity must be a requirement for the next generation of nuclear power plants."

At the meeting, staff from NRC's Office of Nuclear Security and Incident Response and other offices detailed progress made on security issues. NSIR Director Roy Zimmerman said that NSIR now has over 200 staffers, compared with 80 when it was established in 2002. The NRC security budget has increased more than 10-fold since the September 11, 2001 terrorist attacks, he said.

Swedish regulators insist on changes before allowing restart of Forsmark

Sweden's Forsmark-1 and -2 cannot restart until improvements are made to the power supply for backup diesel generators, to battery power, and to control room displays so that there cannot be a repeat of the July incident in which two of those generators failed to deliver emergency power, officials at the Swedish Nuclear Power Inspectorate or SKI, said September 14. In announcing their decision, they said the incident was "serious, as safety systems were needed but did not fully work. Therefore, SKI requires changes in the electricity system at the reactors making it impossible for the same malfunction to occur."

On July 25, the Forsmark-1 BWR scrambled after a short circuit occurred when work was being done at a 400-kilovolt switchyard. A failure of the inverters and the uninterruptible power supply meant that two of four diesels could not deliver backup power. A number of control room displays also failed, making it difficult for operators to assess the situation. The incident was upgraded from Level 1 to Level 2 on the INES.

Current Activities at NRC

NRC is in the process of reviewing four early site permit applications and one design certification request, and is involved in pre-application reviews with two other reactor designs. But the real test of NRC's ability to handle the

new plant workload will begin next year when the first of the combined construction permit-operating license (COL) applications is filed.

Klein said NRC is expecting some 13 applications with requests to build up to 27 new units. That list includes TXU, which publicly announced plans August 31 to possibly build between 2,000 and 6,000 megawatts of new nuclear generating capacity in Texas and other states (see story below).

NRC closing in on resolution of Callaway MSIV issue

NRC staff might be within a month of resolving the question of whether Callaway should have declared a main steam isolation valve (MSIV) inoperable last year when one of the valve's two actuators was out of service. Staff met with officials from AmerenUE's Callaway plant and Wolf Creek Nuclear Operating Corp.'s Wolf Creek station last week to discuss the utilities' position. The two plants have an identical Westinghouse four-loop design. Each MSIV has dual actuators, one on each train. One MSIV is installed on each of the plant's four main steam lines.

A point of contention has been whether the valve met single failure criterion with one train out, said William Jones, a branch chief in NRC's Region IV office. Both Callaway and Wolf Creek are among the reactors that he tracks. He questioned what would happen if there were a single failure on the operating train.

Expansion at NRC headquarters could lead to Three White Flint

NRC is looking at a parcel of land across the street from its Rockville, Maryland headquarters to potentially build a new office to relieve its current space constraints while keeping agency employees concentrated in one location. A General Services Administration spokesman told Platts August 16 that GSA is considering the nearby property, along with other new or existing space in the area. GSA acts as the government's landlord, acquiring and equipping office space for federal agencies. GSA owns One White Flint North, an 18-story high-rise, and leases Two White Flint North, a nine-story building, on the NRC campus.

Commission approves split of NRR into offices for existing, new reactors

Following on the heels of a major reorganization of the Office of Nuclear Material Safety and Safeguards, the NRC is close to finalizing changes that would shrink the size of the Office of Nuclear Reactor Regulation after moving the new reactor licensing activities into a separate office. The commission discussed the new organization at a closed July 12 commission meeting — Chairman Dale

Submittals for AP1000 COLs to start reaching NRC in October 2007

October 2007 will be a landmark month for potential new nuclear construction in the US, with the first construction permit-operating license (COL) applications for Westinghouse AP1000 reactors scheduled to be submitted to NRC.

NuStart Energy will lead off the expected wave of AP1000 submittals with a COL application for the Tennessee Valley Authority's Bellefonte site, the consortium said last week. Later in October, other consortium members — Duke Energy, Progress Energy, and South Carolina Electric & Gas Co. — plan to submit COL applications for AP1000s at their respective sites. Each AP1000 applicant is a member of NuStart and is planning for two units per site. For AP1000 reactors, the reference COL application will be for Bellefonte.

In a July 17 letter to NRC, NuStart said the Bellefonte submittal date is dependent on several key assumptions, including that design information approved as part of the certified design is treated by NRC staff as final and sufficient for design issues. Another key factor is that the approved COL application guidance (currently being developed) is finalized in a timely manner and in a manner consistent with stakeholder discussions in recent workshops, it said. The final issue is that the acceptance criteria of the NRC standard review plan sections will be revised consistent with the industry's understanding of the information needs, Entergy said.

Draft Regulatory Guide DG-1142, “Guidelines for Environmental Qualification of Safety-Related Computer-Based Instrumentation and Control (I&C) Systems in Nuclear Power Plants”

The staff had previously prepared a draft regulatory guide, DG-1077, “Guideline for Environmental Qualification of Microprocessor-Based Equipment Important to Safety in Nuclear Power Plants.” and was ready to issue this regulatory guide as a final. Since this guide endorsed the Institute of Electrical and Electronics Engineers (IEEE) standard (Std) 323-1983, “IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations.” The Nuclear Utility Group on Equipment Qualification (NUGEQ) requested postpone DG-1077 issuance, as the industry was in a process of revising the IEEE Std 323-1983. Upon completion of the new standard (i.e., IEEE Std 323-2003), the staff has decided to endorse the latest 2003 IEEE standard, with additional qualification testing and documentation requirements of safety-related computer-based I&C systems located in a mild environment. A new draft guide will be issued as DG-1142.

Information Notices Issued in 2006

IN 2006-22: New Ultra-low-sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance.

IN 2006-21: Operating Experience Regarding Entrainment of Air into Emergency Core Cooling and Containment Spray Systems. September 21, 2006

IN 2006-20: Foreign Material Found in the Emergency Core Cooling System. Issued on October 16, 2006. Oconee -during sump suction piping replacement.

IN-2006-18: Significant Loss of Safety-Related Electrical Power at Forsmark, Unit 1, in Sweden. Issued on August 17, 2006

IN 200616: Implementing Search Requirements for Personnel, Packages and Material at NRC-Licensed Facilities Issued on July 28, 2006

IN 200614
sup1: Potentially Defective External Lead-Wire Connections in Barton Pressure Transmitters Issued on September 25, 2006

The NRC staff performed an inspection of PRIME in July 2006 and determined that the most recent PRIME environmental qualification for Barton Models 763, 763A and 764 pressure transmitters was performed for the pre-May 1982 connector design with Polyolefin heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material. The NRC staff found that PRIME was unable to provide documentation to demonstrate that the post-May 1982 connector design, which does not have heat-shrink sleeving over the individual external lead wires extending into the epoxy potting material, is environmentally qualified.

IN 200614 Potentially Defective External Lead-Wire Connections in Barton Pressure Transmitters Issued on July 10, 2006

IN 2006-06, “Loss of Offsite Power and Station Blackout Are More Probable During Summer

Period," Issued on March 3, 2006.

Regulatory Issue Summary

RIS-06-017 NRC Staff Position on the Requirements of 10 CFR 50.36, "Technical Specifications," Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels Issued on August 24, 2006

Regulatory Guides Out For Comment

DG 1142 Guidelines for Environmental Qualification of Safety Related Computer-based I & C Systems in Nuclear Power Plants

DG 1153 Availability of Electric Power Sources (revision to RG 1.93)

RG 1154 Installation Design and Installation of Large Lead Storage batteries for Nuclear Power Plants (revision to RG 1.128)

RG 1155 Maintenance, Testing, and replacement of Large Lead Storage batteries for Nuclear Power Stations. (revision to RG 1.129)

RG 1172 Selection, design, Qualification, and testing of Emergency Diesel Generator Unit used as Class 1E Onsite Electric Power Systems. (Revision to RG 1.9)